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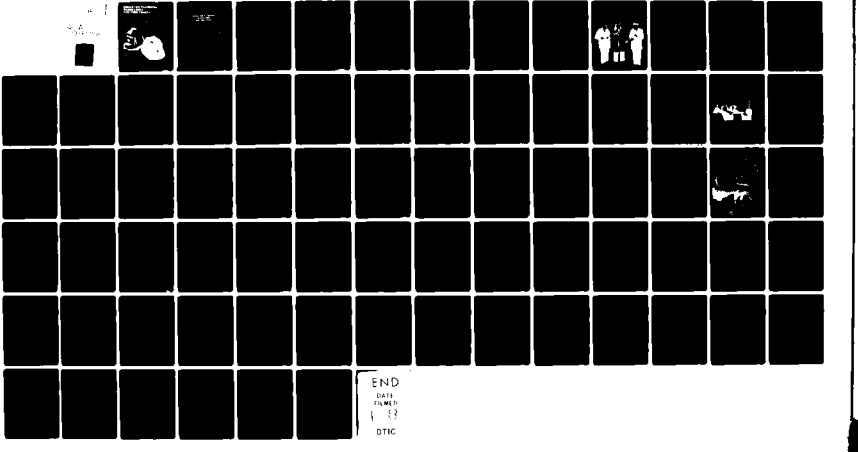

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DISASTER PLANNING GUIDELINES FOR FIRE CHIEFS

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Prepared Under FEMA Contract DCPA 01-79-C-0303

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LEVEL II

International Association of
Fire Chiefs

FINAL REPORT

Work Project No. 25311
July 1980

12

DISASTER PLANNING GUIDELINES FOR FIRE CHIEFS

FINAL REPORT

by
Michael S. Hildebrand

(International Association of Fire Chiefs, Inc.)

for
Federal Emergency Management Agency
Washington, D.C. 20476

Prepared Under Contract Number DCPA01-79-0303

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This planning guide was prepared by the International Association of Fire Chiefs in fulfillment of a contract with the Federal Emergency Management Agency to identify the extent, level of involvement, cooperation and success of local fire departments in disaster planning. Types of disaster plans, planning elements and relationships among federal, state and local plans are examined as they relate to fire service preparedness and operations.

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Checklists, sample plans and a bibliography are included for plan development.

Abstract

This planning guide was prepared by the International Association of Fire Chiefs in fulfillment of a contract with the Federal Emergency Management Agency (Contract No. DCPA01-79-C-0303) to identify the extent, level of involvement, cooperation and success of local fire departments in disaster planning. Types of disaster plans, planning elements and relationships among federal, state and local plans are examined as they relate to fire service preparedness and operations.

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The Disaster Planning project conducted by the International Association of Fire Chiefs, Inc. was supported continuously through the cooperation of many individuals and organizations. Important assistance was provided by the project task force. This multi-disciplinary group reviewed the results of the preliminary survey, provided input on recommended guidelines and reviewed the final report. The task force participated also in assembling the final planning guide.

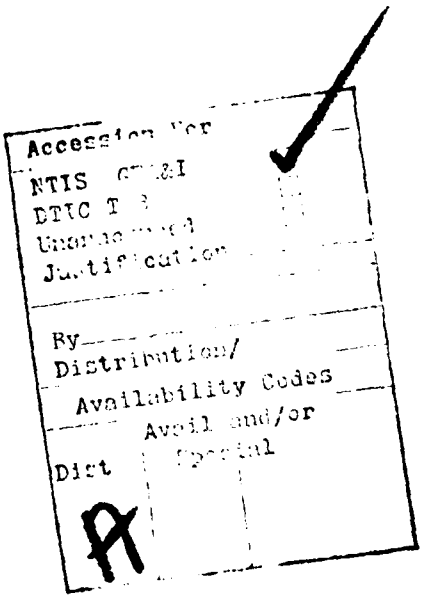
William F. Crapo, an International Association of Fire Chiefs' (IAFC) Intern, assisted with the collection and analysis of data obtained from the disaster planning survey. Other valuable assistance was provided by IAFC Interns Thomas W. Grailing and Adrienne Lipski, who participated in data collection and the literature search. A special thanks to Rita Kirvan and Gail M. Stone, who provided essential secretarial services and Betsy Weaver, who conducted the editorial review.

Throughout the study a variety of staff members from various organizations provided assistance, particularly James W. Kerr, Federal Emergency Management Agency; JoAnne Fish Hildebrand, National Transportation Safety Board; and Marie Hayman, International City Management Association.

Finally, more than 760 chief fire officers contributed data by responding to a detailed survey. In some cases, individuals put forth extra effort by forwarding copies of their department's disaster plans, standard operating procedures and checklists. This report would not have been possible without their support.

Inside artwork by Michael McGurk.

Cover Photograph courtesy of *The International Fire Chief* magazine.



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Foreword

The *Disaster Planning Guideline for Fire Chiefs* has been developed by the International Association of Fire Chiefs to assist fire chiefs with the preparation of fire department disaster plans. This material can be used by any fire department official charged with the responsibility of preparing a disaster plan. It must be emphasized however, that the fire department disaster plan is an integral part of, and must support, the local government disaster plan. The purpose of this effort then, is to supply the fire chief with general guidelines for solving the problems associated with the monumental task of preparing for future disaster.

Since this material is essentially a planning guide, the reader is encouraged to refer to the *Urban Guide for Fire Prevention and Control Master Planning* for a discussion of, and supplement to the planning process. The guide has been designed to supplement the needs of training, education and experience for chief fire officers involved in comprehensive emergency management programs. Users of the Guidelines may find it useful not only as a planning tool but as a data base for developing proposals for improvement projects or as a training aid. For example, the guide may be used as a study guide for Fire Officer Professional Qualifications (NFPA 1021-Section 49-Major Emergency Planning).

The Guideline has been divided into three sections. Section I introduces the user to the historical involvement of the fire service in disaster preparedness. It provides the reader with an overview of fire service disaster planning problems as they currently exist. Information in this section may be used as an educational tool for informing key individuals and decision makers of the needs of the fire service.

Section II discusses planning styles and elements of a community's disaster plan. Emphasis is placed on how the fire department's disaster plan fits into local, state, federal and volunteer organization disaster plans.

This section also provides the fire chief with detailed guidelines for preparing the fire department's disaster plan. Methods of evaluation disaster potential, updating the plan and training are explained.

Section III provides suggested detailed planning areas as well as guidelines in checklist form for different types of disasters.

Section I
An Overview Of
Disaster Planning

Introduction

Section I presents the historical background of disaster planning in the United States and outlines its present status. The role of the fire service as a primary player in disaster management is documented.

An explanation of the methodology used for both the IAFC disaster planning survey and subsequent development of this Guideline is provided in detail and includes descriptions of the selection of the sample population, question design and response sample.

Perhaps the most significant information in Section I is that provided by the survey responses. Fire chiefs' perceptions of the problems they face when undertaking disaster planning revealed such important concerns as limited resources, coordination with other agencies, and command and communications. Charts containing survey results give supporting evidence for these concerns on a point-by-point basis.

Chiefs also were questioned about their perceptions of the disaster potential in their jurisdictions and what they saw as the necessary level of planning for that disaster potential. More specifically they were asked whether or not they had a plan, what that plan addresses, if and when it is used, and what, if any, steps are taken to update it.

Section I continues with a discussion of the definition and purpose of disaster planning with respect to the fire service. The discussion emphasizes the importance of planning as an ongoing process and addresses the open-ended problem of disaster planning.

Finally, different types of disaster plans are explained. Federal, state and local plans, and the hierarchies and the associated services (National Guard, Red Cross) of each are provided to assist the reader.

Chapter 1

Historical Development of Disaster Preparedness

Emergency preparedness in the United States is as old as the nation's earliest communities. Early historical accounts describe efforts to lessen the impact of disaster through community planning.

It is widely known that the first colonial settlements were plagued with conflagrations, disease and similar disasters, many of which nearly destroyed entire communities. It was fortunate that protective measures, tested under disaster conditions, were developed by the New Englanders at Plymouth and, subsequently, passed on to later generations. Public responsibility was, of necessity, an accepted tenet, as was an individual's responsibility to be prepared and able to respond.

Mutual aid and the formation of such public safety groups as civil defense, police, and fire departments are all part of America's cultural history.

During the 1940s, the federal civil defense organization's priority was preparing the country to withstand possible enemy attacks. Local fire department involvement varied considerably across the country, but, as a minimum, was likely to be a fire siren used to warn the local community. On a much larger scale, cities such as New York realized the necessity for fire service involvement in emergency preparedness and were instrumental in developing strong community civil defense.

In his 1940 report to the International Association of Fire Chiefs Committee on Disaster Emergencies, New York City Fire Commissioner John J. McElligott stated:

> "While primary responsibility for adequate disaster planning does not fall directly upon the fire department of a municipality, but rather upon all the individual functions of its government, this work must, because of the character of our regular labors, inevitably be delegated to us. Just as inevitably must the fire departments, in pursuing this function and in operating under any plan, furnish the nucleus and background upon which its success will depend."[1]

The awareness of the fire service's important role in civil defense was recognized in the Federal Civil Defense Act of 1950, which provided funding for civil defense/fire service training. Perhaps the most dramatic manifestation of that unity was the Rescue Village near Olney, Maryland. Funding provided by the 1950 Act resulted in training courses for citizens, fire departments and auxiliaries. Traces of these programs remain today as evidence of the programs' success.

Following the Berlin Crisis of 1961, President Kennedy moved existing civil defense programs into the Pentagon. His decision was based on the rationale that population preparedness for the survival of nuclear war was part of the strategic equation: thus, it should be administered by the arm of the government responsible for strategic affairs. The President's decision produced mixed feelings from the fire service.

Funding emphasis shifted from hardware grants to surplus and excess property allocation. Operational fire training programs were phased out, while research and technology transfer programs received increased funding.

Under the auspices of the Pentagon, fire service access to military resources became easier, and many support missions were accepted for use during crises. The more common services provided included support for wildland fire control, disaster rescue and recovery operations and the well known

[1] *Preliminary Report, International Association of Fire Chiefs, Sectional Committee on Disaster Emergencies, by Chairman John J. McElligott, 1940.*

Military Assistance for Safety and Traffic (MAST) program for helicopter evacuation of the injured.

In addition to operational support, civil defense financed a variety of fire research efforts. At a time when other government agencies focused on the specifics of fire behavior, civil defense directed much of its research efforts toward the broadest possible fire service view of disaster preparedness.

Throughout past years, the civil defense/fire service bond has remained strong. Civil defense staff members have been appointed to technical committees of the International Association of Fire Chiefs, the National Fire Protection Association, the newly-organized Federal Fire Council and the National Academy of Sciences. As fire service pressure for re-establishing a program of direct support to the fire service has mounted, federal civil defense authorities have helped draft legislation which established the National Commission for Fire Prevention and Control. When the 1974 Act established the National Fire Prevention and Control Administration (now the U.S. Fire Administration) there was full participation between civil defense and the fire service in program development, including the major study on the National Fire Academy.

In June 1978, President Carter formed the Federal Emergency Management Agency (FEMA). This new organization combines federal disaster agencies into a single agency to avoid overlapping and unnecessary administrative complexities. For the first time within the federal government, federal emergency preparedness and fire activities have a central focal point.

Many individuals have sensed a disaffection between civil defense and the fire service. However, the historical interaction between the two, as well as their present level of involvement, indicates they are inter-dependent. In the event an emergency occurs, the fire service routinely is called to render assistance. In most cases, the fire department provides the required services. However, when a disaster occurs, regardless of the type, citizens instinctively summon the fire department. For some, it is difficult to imagine the level of involvement when 10,000 citizens must be evacuated in advance of a toxic gas cloud, or the coordination necessary to recover 240 dismembered air crash victims from what was once a quiet residential neighborhood. As one fire chief stated, following a tornado, "one is hard pressed to imagine the many people involved in recovering from a disaster of this magnitude."

With few exceptions, no single event taxes a fire department's resources on a scale comparable to that of a major disaster. The ability to produce a favorable outcome once disaster has occurred is dependent on a community's ability to coordinate, cooperate and function in a capacity that will save lives, property and the environment. The fire service, then, is a primary player in disaster preparedness and is depended upon at all levels of emergencies. Conversely, the fire service depends on other agencies to supply the support necessary to plan for and perform its assigned duties during emergencies.

It is no accident when fire departments function efficiently during times of stress. Only through cooperative and coordinated planning can a favorable outcome be achieved. The following chapters in this guide are designed to assist chief fire officers in identifying planning problems, elements and resources. Where applicable, guidelines for preparing a fire department plan have been provided. Where planning styles and philosophies differ, the guide does not endorse either. Rather, an attempt to describe each has been made.

Chapter 2

Disaster Preparedness Project Methodology

Methodology

This planning guide was produced by the International Association of Fire Chiefs (IAFC) in fulfillment of a contract from the Federal Emergency Management Agency (FEMA), (Contract No. DCPAO1-79-C-0303).

Within the scope of the contract the project team identified the extent of involvement, cooperation and success between fire chiefs and emergency preparedness directors in the development and operation of disaster contingency plans.

The project staff accomplished the following tasks in support of the contract: 1) a survey of IAFC chief officers to identify participation in emergency preparedness contingency planning; 2) a literature search and analysis to identify effective disaster planning models; 3)development of fire service emergency preparedness guidelines; 4) preparation of a disaster planning guide for fire departments; and 5) publication of a series of emergency preparedness journal articles.

The information procured was obtained by one, or a combination of three methods: 1) membership surveys; 2) literature review; and 3) interviews. The approaches used within each method are described briefly in the following subsections of this chapter.

Surveys

In support of the IAFC/FEMA contract, the IAFC conducted a survey of chief fire officers to identify participation in emergency preparedness contingency planning. Survey recipients were restricted to the chiefs of individual fire departments. Survey questions were designed to obtain information related to two major areas: 1) the fire chiefs' perception of disaster planning problems in the community, and 2) the level and extent of fire department disaster planning.

Desired Survey Results

The desired results of the survey were to: 1) obtain an understanding of existing disaster planning problems common to most fire departments; 2) identify specific planning problems by geographic region, fire department type and population of the respective jurisdiction; and 3) establish a list of fire departments which had a specified disaster plan, implemented that plan during an actual disaster, and revised the plan following its implementation.

Selection Of The Sample Population

Survey participants were selected from the IAFC active member listing of chief fire officers. For the purpose of the survey a chief fire officer was defined as the senior career or volunteer staff person with the primary responsibility to make administrative and managerial decisions regarding the day-to-day operations of the fire department.* This group was chosen because of a desire to measure the chief officer's personal involvement in disaster planning and to obtain his perception of specific problems common to the local area.

Question Design

Survey questions were written to obtain objective and subjective responses. Most questions could be answered simply by checking an appropriate block. Where additional information was desired, areas were provided for brief comment. This format assisted in obtaining a return of 29% of the 2692 surveys mailed out.*

The development of survey questions came from two sources. One sequence of questions was taken from a 1974 report by the IAFC Civil Defense Committee, titled *Report on a Survey to Identify the Interest of the Fire Service in Civil Defense*. These questions were selected to make a five-year comparison of the fire service/disaster preparedness (civil defense) interface. Additional questions were developed by the IAFC project staff to obtain information on plans development, problem recognition and disaster training. (see page 66.)

To ensure the quality of the survey, individuals were engaged for technical review before the survey was distributed. All survey questions were reviewed for content by human factors specialists, independent training specialists and numerous fire protection personnel.

Survey Design and Distribution

Distribution and return of the survey was made possible by using a folding, self-mailing form. The design of the form permitted the respondent to answer all questions without additional research of the appropriate response.

Data Processing

Response data were screened for errors and entered into the IAFC's computer. Previous numerical coding of the responses eliminated the necessity of coding data and transferring it to a data entry record.

The three-phase screening process consisted of: 1) checking responses for incomplete data; 2) reviewing questions for proper sequence; and 3) the review and cataloging of written comments prior to data entry.

A *Statistical Package for the Social Sciences* (SPSS) program was used for final data analyses which are discussed in detail in Section II of this report.

Response Sample

The response sample consisted of 771 of the 2,692 original surveys distributed. This resulted in a net return of 28.6%. Unfortunately, problems were discovered as surveys were returned. Some of these problems involved responses to questions essential to the survey. Some answers indicated that respondents did not fully understand certain questions. This problem required close screening during the data processing. All surveys which failed to answer essential questions were discarded. Therefore, of the 771 total responses, only 714 or 26.5% of the total distribution were classifiable and eventually used in the final analysis.

Literature Search

Concurrent with the survey, the project staff undertook a

literature review of material relevant to fire department disaster planning. The National Technical Information Service (NTIS) was used for initial literature searches.

The NTIS staff conducted a computer search using major topical headings,and produced approximately 300 disaster planning-related publications. Each piece of literature recovered from the search was screened, abstracted and filed for use in preparation of the final document.

Following the NTIS search, the project staff studied individual disaster incident reports for relevant planning problems. Official factual incident reports from the National Transportation Safety Board, Department of Transportation, Federal Emergency Management Agency and local government also were reviewed.

Through a cooperative effort between the IAFC and the International City Management Association (ICMA), the project staff reviewed approximately 300 local government disaster plans. Each plan was screened for fire service involvement, planning style, and new or unusual methods which could benefit other emergency response organizations.

Interviews With Chief Fire Officers

Throughout the project written comments were solicited from chief fire officers to identify specific planning problems. Responses were reviewed and filed according to problem topics. When necessary, a respondent was contacted for clarification or elaboration on specific points of his response.

In some cases, the project staff conducted follow-up interviews with fire chiefs who indicated they had: a) implemented a disaster plan within the past five years; b) experienced operational problems as a result of implementing the plan, and c) revised that plan following implementation.

The information obtained from written comments and interviews was especially valuable for use in developing planning guidelines based on actual needs described by the fire chiefs. In some instances, where an actual field visit was not practical, the fire chief was contacted by telephone or mail. Although this technique reduced the variety of personnel to be interviewed, it did permit in-depth discussions with representatives from departments that had useful information. As an example, project team members participated in three major disaster management programs, enabling them to obtain additional information from nearly 200 disaster management researchers, emergency service personnel and local government officials.

Upon completion of the project, all information, data and related materials were organized into a rough draft report and forwarded to seven members of the IAFC disaster planning project task force for their analysis and review (see acknowledgements for task force members). This task force held two workshops to complete the final recommendations, editorial work and preparation of the final report.

Chapter 3

Disaster Planning in the Fire Service: An Overview of Current Problems

Fire Chiefs' Perceptions Of Disaster Planning Problems

The Emergency Preparedness Director/Coordinator

Many fire service personnel have leveled strong accusations about problems created by the local emergency preparedness coordinators' involvement in emergency operations and disaster planning. Until this report was written, little data had been collected to establish the validity of such accusations or identify specific problems with emergency preparedness personnel.

In an initial step toward obtaining additional data, the project staff designed a series of questions intended to obtain fire chiefs' perceived relationships with local emergency preparedness officials.

Before they addressed specific problems, the project staff identified the individual fire chief's personal involvement in emergency preparedness. When asked, "Are you an emergency preparedness director (or coordinator, civil defense director or similar title, i.e., the person who is primarily responsible to coordinate and lead in developing civil preparedness?"), 201 chiefs, or 28.4% of the 708 responding to the question, answered YES. This response indicated that, of those surveyed, more than 25% actually were both the fire chief and the emergency preparedness director. Analysis of a survey conducted by the IAFC in 1974 revealed that 23.7% of 912 fire service personnel surveyed were emergency preparedness directors. These findings indicate that at least 25% of those chiefs surveyed have a working knowledge of the authority, responsibility, functions, and day-to-day duties of a local emergency preparedness director or coordinator.

Realizing that many emergency preparedness directors are part-time employees, fire chiefs were asked to identify the part-time emergency preparedness director's full-time occupation. Of 456 responses, 32.9% stated that the part-time emergency preparedness director/coordinator's full-time occupation was with fire and rescue services. The next highest category was 16% employed as mayor, or city/county manager staff. (Additional job classifications are listed in Appendix 4, question 17.)

When asked to rate fire department's relationship with emergency preparedness directors, 66.7% of 459 respondents perceived the relationship as being very good; 27.8% as good, and only 5.5% as being poor. The fact that an overwhelming 93.8% of the chiefs surveyed perceived their department's relationship as being good to very good seems to discredit statements of general fire service discontent with emergency preparedness personnel.

A complaint heard frequently within the fire service is that confrontation occurs when local emergency preparedness personnel assume roles as directors at emergencies rather than as coordinators. To identify the fire chiefs' perceived roles in emergency preparedness, fire chiefs were asked, "How would you describe the role of your local emergency preparedness director?" The chiefs were asked to address specifically their perceived roles in both planning for disasters and in practice at disasters. The following chart displays the collected data:

Perceived Roles of Emergency Preparedness in Planning

	Total Responses	*% of Total Response*
Directs	121	17.8
Coordinates	418	61.5
Liaison with other Agencies	276	40.6
Other	65	9.6

Based on 680 TOTAL RESPONSES.

Perceived Roles in Practice

	Total Responses	*% of Total Response*
Directs	106	22.0
Coordinates	248	51.5
Liaison with other Agencies	187	38.8
Other	57	11.8

Based on 482 TOTAL RESPONSES

Note percentages will not equal 100% since more than one response could be checked.

In planning, it appears that those fire chiefs sampled see the role of emergency preparedness primarily as one of coordination, with liaison to other agencies as the second highest response. In practice, 248 respondents, or 51.5%, saw the role as one of coordination, with 187, or 38.8% indicating liaison as the second most important role.

These data seem to indicate that, at least for those surveyed, fire chiefs do not perceive direction as the primary role of emergency preparedness. It should be pointed out, however, that some states, by law, mandate direction as the role of emergency preparedness during a disaster. (This might account for the level of responses in the category of direction.)

To determine the frequency of formal contact between the fire department and emergency preparedness personnel, fire chiefs were asked, "Does your fire department conduct meetings at least once a year with the local emergency preparedness director?" Of the 704 respondents, 477 or

67.8% stated that they do meet at least one time during the year.

When asked, "Do you feel the emergency preparedness director has a basic understanding of fire and rescue service problems as they relate to disaster planning?," 560 or 80.9% of 692 chiefs responded YES.

Analysis of data collected from the previously described sample seems to indicate that fire chiefs experience no significant problems with emergency preparedness organizations. The reader is cautioned not to interpret this statement as meaning problems do not exist. However, some general conclusions about the respondents can be made.

First, data collected indicate that, contrary to widespread opinion, most fire departments have good working relationships with local emergency preparedness directors.

Second, an overwhelming majority of fire chiefs believe that emergency preparedness directors have a basic understanding of fire and rescue service problems as they relate to disaster planning.

Plans Development and Disaster Preparedness

Comments provided by survey recipients supplied useful information on the problems chiefs face in plans development and disaster preparedness training. Similar comments were made by a number of jurisdictions. Among the most frequent responses were:

- Lack of interest by other agencies and city officials:
- Limited resources — personnel, money and time — for planning;
- Lack of interest by other agencies, government and/or private;
- Inadequate cooperation with other organizations; and
- Lack of a common mutual aid radio frequency with fire and rescue agencies.

Municipal Agencies and Officials

The most frequent comment received from fire chiefs surveyed during this project, and one of primary concern for most who responded, was a lack of participation and interest by other municipal agencies and officials. In fact, it was surprising that many chiefs indicated their city managers, mayors and councils expressed total lack of interest in disaster planning. Several chiefs attributed this attitude to local government opinion that disasters occur infrequently in their communities.

Limited Resources

Money appeared to be the principal factor affecting plans development and training. In many cases, fire service managers related the lack of time and personnel to the absence of necessary funding. Several chiefs noted that funds were not available to pay the overtime necessary for maintaining a satisfactory level of personnel for normal responses while other emergency service personnel participated in disaster planning exercises and educational programs.

Others who commented indicated simply that money was not available for purchasing materials necessary for either planning or training.

The lack of personnel was evident in two different areas. First, several chiefs complained of a lack of available personnel to make live disaster drills possible. This was caused both by a shortage of funds and the inability of volunteers to secure release from regular employment to participate in drills. Second, many chiefs expressed concern over the lack lack of personnel qualified to develop plans. They felt their personnel did not have the skills necessary for either planning or training.

Insufficient time also created problems. Several chiefs indicated that elected officials did not have the time to devote to disaster planning. One reason for this lack of commitment was that city officials were too busy with normal day-to-day administrative activities to invest time in planning. Many city officials simply felt that the likelihood of a major disaster was too remote to warrant their time for planning and training.

Several chiefs said a high personnel turnover rate made familiarization with any disaster plan a difficult problem.

Communications

Another frequently mentioned concern of many chief officers was communications for disaster operations, primarily the lack of a common radio frequency. Several chiefs mentioned that surrounding jurisdictions had independent radio frequencies with no mutual aid capabilities. Many chiefs stated that existing communications required the chiefs to relay messages through a dispatcher.

Also discussed were the lack of radio communication with other city agencies and the lack of a central control communications facility. One chief said he alleviated his communications problem by soliciting the aid of a citizens band radio club.

Command

Command was still another area of concern. Several problems identified by officers who participated in the IAFC's 1979 Disaster Planning Survey were related to the inability of support agencies such as the city manager's or mayor's office to accept positions in the chain of command. Some respondents blamed this on the lack of a full-time civil preparedness director, lack of jurisdictional unity and failure to spell out the command process.

Planning Priorities And Perceived Potential For Disasters/Enemy Attack

In the event of an enemy attack, the local fire department will be called upon to supply vital emergency services. Fire chiefs who participated in the IAFC survey were asked, "As the chief for your jurisdiction, how would you rank the need for a local government emergency/disaster plan for: a) International crisis or enemy attack; or b) Peacetime disaster. The following responses were received:

International Crisis or Enemy Attack

Total

714 Responses	*No. of Responses*	*% of Total Responses*
High Priority	220	31.2
Moderate Priority	283	40.1
Low Priority	203	28.8

Peacetime Disasters

Total

701 Responses	*No. of Responses*	*% of Total Responses*
High Priority	529	75.5
Moderate Priority	151	21.5
Low Priority	21	3.0

These responses clearly indicate that the majority of those chiefs who responded perceived the need for peacetime disaster plans as being greater than the need for enemy attack plans. It should be pointed out, however, that at least 71% of the total respondents perceived the need for enemy attack disaster plans as moderate to high.

Following the previous question, fire chiefs were asked whether their fire departments currently maintained written disaster plans for: a) International crisis or enemy attack: and, b) Peacetime disaster. Only 44.5% of the 695 respondents actually maintained a disaster plan for international crisis or enemy attack. In contrast, 80.5% of 698 fire chiefs stated that they maintained a peacetime disaster plan.

The results of this series of questions reflect that, while 71% of the chiefs who responded rated the need for an enemy attack disaster plan as moderate to high, only 44.5% of their fire departments actually maintained plans. Of particular interest to the preceding series of questions is the fact that 59.4% of 628 respondents believed that their jurisdictions currently have the potential for enemy attack.

Chiefs' Perceptions of Disaster Potential

Fire chiefs were requested to identify their perceived potential for disaster in categories of natural and man-made disaster. These categories were expanded to include such disaster types as earthquakes, flood, etc. Table 1 summarizes these responses.

Table 1

In your opinion, does your jurisdiction currently have the potential for the following disasters?

Natural Disasters

Total # of responses to water disaster-dam burst, flash floods=679.

Number of YES responses:	497	Percentage of YES responses:	73.2
Number of NO responses:	182	Percentage of NO responses:	26.8

Total # of responses to Earth Movements—earthquakes, mud slides=638

Number of YES responses:	275	Percentage of YES responses:	43.1
Number of NO responses:	363	Percentage of NO responses	56.0

Total # of responses to wind storms—hurricanes, tornados, winds in excess of 75 M.P.H.=685

Number of YES responses:	577	Percentage of YES responses:	84.2
Number of NO responses:	108	Percentage of NO responses:	15.8

Total # of reponses to winter blizzards—ice/snow storms=678

Number of YES responses:	510	Percentage of YES responses:	75.2
Number of NO responses:	168	Percentage of NO responses:	24.8

Total # of responses to drought=594

Number of YES responses:	329	Percentage of YES responses:	55.4
Number of NO responses:	265	Percentage of NO responses:	44.6

Total # of responses to other=90

Number of YES responses:	47	Percentage of YES responses:	52.2
Number of NO responses:	43	Percentage of NO responses:	47.8

Man-Made Disasters

Total # of responses to enemy attack=628

Number of YES responses:	373	Percentage of YES responses:	59.4
Number of NO responses:	255	Percentage of NO responses:	40.6

Total # of responses to nuclear incident=638

Number of YES responses:	393	Percentage of YES responses:	61.6
Number of NO responses:	245	Percentage of NO responses:	38.4

Total # of responses to hazardous materials transportation (rails, aircraft, water, pipeline, truck)=684

Number of YES responses:	637	Percentage of YES responses:	93.1
Number of NO responses:	47	Percentage of NO responses:	6.9

Total # of responses to transportation (other than hazardous materials) e.g., aircraft crash, passenger train=673

Number of YES responses:	614	Percentage of YES responses:	91.2
Number of NO responses:	59	Percentage of NO responses:	8.8

(Table 1 continued on next page)

Table 1 *continued*

Total # of responses to conflagration=628			
Number of YES responses:	501	Percentage of YES responses:	79.8
Number of NO responses:	127	Percentage of NO responses:	20.2
Total # of responses to other (specify)=61			
Number of YES responses:	31	Percentage of YES responses:	50.8
Number of NO responses:	30	Percentage of NO responses:	49.2

Analysis of these data reveal that fire chiefs perceived a high disaster potential (80% or greater) in the categories of: wind storms — 84.2%; hazardous materials transportation — 93.1%; transportation (aircraft crash, train derailment, etc.) — 91.2%; and conflagration — 79.8%. The perceived potential for all other categories of disaster fell in the 50% to 79% range. Only one category, earthquakes (43.1%), was perceived as having less than a 50% potential.

Chapter 4

Fire Department Disaster Planning: The Level and Extent Of Planning

Coordination With Other Agencies

The escalation of an emergency beyond the capabilities of normal fire department services often requires the support of many local, state, federal and independent agencies. Receiving necessary support services from outside agencies requires, at the minimum, coordination with all concerned. Conversely, support required by other primary response groups will require coordination from the fire department. The project team asked chief officers a series of questions related to the fire department development of a disaster plan.

Chiefs were asked whether their fire department plans were developed solely by fire department personnel. Of 623 respondents, 410, or 65.8%, indicated that the fire department was not the sole agency for plans development.

Chiefs then were asked to identify agencies other than the fire department that participated in the development of their disaster plans. Table 2 summarizes the responses.

Table 2

If agencies other than the fire department participated in the development of your plan, identify the participating agencies.

Total # of responses to emergency preparedness = 341			
Number of YES responses:	263	Percentage of YES responses:	77.1
Number of NO responses:	78	Percentage of NO responses:	22.9
Total # of responses to local police = 306			
Number of YES responses:	240	Percentage of YES responses:	78.4
Number of NO responses:	66	Percentage of NO responses:	21.6
Total # of responses to state police = 92			
Number of YES responses:	76	Percentage of YES responses:	82.6
Number of NO responses:	16	Percentage of NO responses:	17.4
Total # of responses to emergency medical services (ambulance, rescue) = 288			
Number of YES responses:	232	Percentage of YES responses:	75.9
Number of NO responses:	56	Percentage of NO responses:	24.1
Total # of responses to national guard = 73			
Number of YES responses:	60	Percentage of YES responses:	82.2
Number of NO responses:	13	Percentage of NO responses:	17.8
Total # of responses to public utilities (gas, electric, telephone) = 146			
Number of YES responses:	120	Percentage of YES responses:	82.2
Number of NO responses:	26	Percentage of NO responses:	17.8
Total # of responses to city/county manager, mayor's office = 234			
Number of YES responses:	186	Percentage of YES responses:	79.5
Number of NO responses:	48	Percentage of NO responses:	20.5
Total # of responses to water department = 190			
Number of YES responses:	155	Percentage of YES responses:	81.6
Number of NO responses:	35	Percentage of NO responses:	18.4
Total # of responses to sanitation department = 130			
Number of YES responses:	109	Percentage of YES responses:	83.8
Number of NO responses:	21	Percentage of NO responses:	16.2

(Table 2 continued on next page)

Table 2 *continued*

Total # of responses to American Red Cross = 159			
Number of YES responses:	125	Percentage of YES responses:	78.6
Number of NO responses:	34	Percentage of NO responses:	21.8
Total # of responses to local hospitals = 202			
Number of YES responses:	158	Percentage of YES responses:	78.2
Number of NO responses:	44	Percentage of NO responses:	21.8
Total # of responses to state departments of transportation = 51			
Number of YES responses:	42	Percentage of YES responses:	82.4
Number of NO responses:	9	Percentage of NO responses:	17.6
Total # of responses to state government = 94			
Number of YES responses:	77	Percentage of YES responses:	81.9
Number of NO responses:	17	Percentage of NO responses:	18.1
Total # of responses to local news media (radio, television) = 116			
Number of YES responses:	94	Percentage of YES responses:	81.0
Number of NO responses:	22	Percentage of NO responses:	19.0
Total # of responses to military = 52			
Number of YES responses:	43	Percentage of YES responses:	82.7
Number of NO responses:	9	Percentage of NO responses:	17.3
Total # of responses to federal agencies = 68			
Number of YES responses:	55	Percentage of YES responses:	80.9
Number of NO responses:	13	Percentage of NO responses:	19.1
Total # of responses to other (specify) = 45			
Number of YES responses:	39	Percentage of YES responses:	86.7
Number of NO responses:	6	Percentage of NO responses:	13.3

Analysis of these responses reveals that fire departments coordinated their plans to a large extent with such primary support services as the emergency preparedness, local police and emergency medical services.

The level of response received on questions which related to such secondary local response agencies as sanitation, utilities, water, etc., was poor. In some cases, fewer than half of the total survey repondents even answered some questions. For example, when chiefs were asked if the city/county manager's or mayor's office participated in the development of the fire department plan, only 234 out of 714 chiefs responded. Within this group of 234 respondents, 186 stated that the manager/mayor participated.

Other noticeably weak responses included coordination with such important support groups as the Red Cross, local hospitals, state government, local news media and military units. It is important to note that each of these supporting groups often maintains its own disaster response plan. Failure to coordinate efforts with these agencies has, in the past, resulted in poor working relationships, conflicting responses and less than desirable performance during an actual disaster.

Specific Planning Areas

Fire department disaster planning varies in detail from department to department. Such differences as geographic location, number of personnel, education and department type are but a few examples of reasons for variation. It has been determined however, that an effective disaster plan must address such basic areas, as mutual aid, command, triage and evacuations.

Data were collected in each of these areas by asking fire chiefs if their plans addressed the following areas: 1) A plan for mutual aid from fire and rescue services in an individual's jurisdiction; 2) A chain of command for all levels of involvement in a disaster; 3) An emergency medical operations plan for triage, treatment and mass transportation of injured; 4) Partial evacuations (e.g., temporary relocation of people in such selected areas as neighborhoods); 5) Total community relocation caused by a hazardous materials release or international crisis; and, 6) Individuals or agencies having the legal duty and responsibility to command disaster operations. Table 3 summarizes the responses.

A high affirmative response was received when chiefs were asked if disaster plans addressed a plan for mutual aid for fire and rescue services. A total of 93.6% of 670 stated that they did maintain such a plan.

Two questions were used to identify fire department disaster plans which spelled out command and control functions. Responses from 647 chiefs indicated that 88.6% did identify the chain of command for all levels of involvement in a disaster. When asked if disaster plans addressed individuals or agencies having the legal duty and responsibility to command disaster operations, the majority (83.7%) of 624 chiefs

Table 3

Does your plan specifically address:

Total # of responses to "a plan for mutual aid from fire and rescue services outside your jurisdiction?" = 670

Number of YES responses:	627	Percentage of YES responses:	93.6
Number of NO responses:	43	Percentage of NO responses:	6.4

Total # of responses to "identify the chain of command for all levels of involvement in a disaster?" = 647

Number of YES responses:	573	Percentage of YES responses:	88.6
Number of NO responses:	74	Percentage of NO responses:	11.4

Total # of responses to "contain an emergency medical operations plan for triage, treatment and mass transportation of injured?" = 653

Number of YES responses:	546	Percentage of YES responses:	83.6
Number of NO responses:	107	Percentage of NO responses:	16.4

Total # of responses to "partial evacuation (e.g., temporary relocation of people in such selected areas as neighborhoods)?" = 645

Number of YES responses:	498	Percentage of YES responses:	77.2
Number of NO responses:	147	Percentage of NO responses:	22.8

Total # of responses to "total evacuation of your jurisdiction (e.g., total community relocation caused by a hazardous materials release or a severe international crisis)?" = 629

Number of YES responses:	257	Percentage of YES responses:	40.9
Number of NO responses:	372	Percentage of NO responses:	59.1

Total # of responses to "individuals or agencies having the legal duty and responsibility to command disaster operations?" = 624

Number of YES responses:	522	Percentage of YES responses:	83.7
Number of NO responses:	102	Percentage of NO responses:	16.3

stated YES. The fact that 102 chiefs indicated they did not identify who has the "legal duty" to command an incident points out serious deficiencies in 16.3% of the respondents' plans. Fire departments that do not specify, in writing, who has the authority to command a disaster situation (by state or local law) might experience serious command and control problems at a disaster.

Fire chiefs identified that 16.4% of 653 respondents did not have an emergency medical operations plan for triage, treatment and mass transportation of injured. This level of response might be explained partially by those departments having no responsibility for emergency medical service. However, the majority (83.6%) did indicate that their departments' plans addressed emergency medical operations.

Recent attention given to mass evacuations, resulting from hazardous materials and industrial emergencies, prompted the project staff to identify fire department preparedness for evacuations. Fire chiefs were asked whether their disaster plans addressed such partial evacuations as the temporary relocation of people in selected areas, neighborhoods, districts, etc. On a much larger scale, chiefs were asked if the same plans addressed total evacuation of the jurisdiction caused by a severe international crisis or hazardous materials incident.

Analysis of the data received revealed a moderate level of planning for partial evacuations with 77.2% of 645 respondents having a plan. A serious deficiency in planning for fire service involvement in large scale evacuations was identified. Only 40.9% of 629 respondents stated that their departments maintained a plan for similar evacuations. Analysis of the same question by population of the fire departments' jurisdictions did not reveal a significant trend by population group or region.

Age and Use of Plans

Chief officers who participated in the survey were asked a sequence of questions designed to identify the extent of fire department disaster plan use and revision. First, chiefs were asked if their departments had implemented the plans on actual disasters within the past five years (1974-1979). Nearly one-half (44.0%) of the 677 respondents indicated that their plan was implemented at least once. Table 4 summarizes the types of disasters for which these plans were implemented.

Natural disaster plans were implemented more frequently than man-made disaster plans. At least 240 fire chiefs indicated that they implemented their disaster plans on two different occasions within the specified five-year period.

When asked if use of their plan resulted in revision, 273 or 71.8% of the 383 respondents stated YES. Chiefs then were asked to identify the last time their departments' plans had been reviewed for necessary changes or revisions. The majority (59.8%) of 615 respondents indicated their plans had been reviewed within the past year (see table below).

Total # of responses: 615

1. Within one year of July 1979 = 368 responses, 59.8 of total response
2. Two to three years = 153 responses, 24.9% of total response
3. Three to five years = 43 responses, 7.0% of total responses

Table 4

Natural Disaster = Total # of responses: 208

1. Water disaster = 127 responses, 41.2% of total response
2. Earth movement = 12 responses, 3.9% of total response
3. Winter blizzard = 177 responses, 57.5% of total response
4. Wind storm = 116 responses, 37.7% of total response
5. Drought = 5 responses, 1.6% of total response
6. Other (specify) = 36 responses, 11.7% of total response

Man-Made Disasters = Total # of responses: 190

1. Hazardous materials transportation incident = 85 responses, 44.7% of total response
2. Hazardous materials fixed facility = 52 responses, 27.4% of total response
3. Transportation (other than hazardous materials) = 60 responses, 31.6% of total response
4. Conflagration = 43 responses, 22.6% of total response

Plan implementation in order of frequency is as follows:

1. Winter Blizzard
2. Hazardous Materials Transportation Incident
3. Water Disaster
4. Wind Storm
5. Transportation (air crash, train derailment) other than hazardous materials
6. Hazardous Materials Fixed Facility
7. Conflagration
8. Earth Movement

4. Five years or more = 51 responses, 8.3% of total response

Nearly one-quarter of the respondents had reviewed their plans within the previous two to three years, 7.0% within the previous three to five years and 8.3% within the previous five years or more. This information indicates that 84.7% of the respondents had reviewed their plans in the three-year period of 1976-1979.

Chapter 5

Disaster Planning: Definition and Purpose

Disaster planning is an attempt, prior to the actual occurrence of a crisis, to facilitate recognition of emergency demands and to make the community response more effective.[2] From the fire department's point of view, disaster planning serves as a discipline for taking prompt and effective action in time of crisis.

It is important to recognize that the word crisis is used in this definition rather than the word *emergency*. By definition, a crisis is a time of great danger or trouble, the outcome of which decides whether possible severe consequences will follow. In contrast, an emergency is a sudden, *unexpected* occurrence or set of circumstances which demand immediate action.

Traditionally, the fire service has trained for and responded to emergencies. In the disaster sense, these emergencies have included the entire realm of natural disasters as well as every conceivable technological catastrophe for which mankind has been responsible. Unfortunately, most of these disasters occurred unexpectedly, with little or no warning. Consequently, most fire departments were forced to develop disaster plans designed to cope with *emergencies* either during or following the disaster.

Fortunately, recent improvements in disaster predictability, controllability and forewarning have assisted emergency services in mitigating the effects of disaster. Subsequently, a significant number of disasters are no longer *unexpected* emergencies, but rather are expected and anticipated crises. As a result, fire service disaster planning has expanded the scope of its definition to include all phases of many types of disasters. One clear example of this is the increased use of Doppler radar for tornado warnings. A significant benefit of Doppler radar is the increased lead time available before tornado occurrence. Many tornado warnings are based on public reports of tornado activity, whereas the Doppler radar detects tornado activity at an average of 20 minutes before the first damage occurs. Although Doppler radar is not entirely operational in all parts of the United States, its future widespread use will require fire departments to expand their existing plans and shift more emphasis to disaster preparedness from disaster response.

The development of a fire department disaster plan is not an end in itself. A written disaster plan in no way guarantees that the actual emergency response will be effective. President Eisenhower once stated that, "Plans are worthless, but planning is everything. . .keep yourself steeped in the character of your problem you may one day be called upon to solve — or to help solve."

Too often , fire departments have applied the converse philosophy to disaster planning. A 1974 disaster planning survey, conducted by the Civil Defense Committee of the International Association of Fire Chiefs, revealed that 44.5% of the 912 fire officers surveyed in 48 states believed that civil defense was a "paper program." Paper plans prepared by an individual agency, with little or no participation by local officials and emergency response groups, are of little or no value unless the plan is *used*. For example, written plans might be valuable for training, and to familiarize local officials with their respective emergency duties. A written plan also provides a framework of understanding by defining clearly the legal duties and responsibilities of those expected to respond. However, the process of planning which yields a plan is of far greater value than the actual plan itself.

This is primarily because of the interaction of local officials who are responsible for emergency operations. If guided properly, this interaction will continue and become an ongoing process of planning. Disaster planning then is a "dynamic process" while the plan itself is simply a static product.

Each fire department jurisdiction has different disaster threats, different resources and, to some extent, different governmental organizations. Therefore, each fire department should develop a plan specifically for each political jurisdiction and tailor it to fit its people and material resources. By doing so, the fire department will assure that all individual talents, response capabilities and equipment are used to the greatest advantage of its citizens.

No single disaster plan exists which can be used by all levels of local government. A fire department operating in the northeastern United States might have an excellent disaster plan but, because of differences in disaster threats, governmental structure, equipment, etc., the identical plan might not apply to a fire department operating in the southwestern section of the country.

Just as types of plans vary by jurisdiction, the level of planning and the detail necessary to fulfill the objectives of individual fire departments vary as well. As a result of these variations, many departments will prepare very specific disaster plans. These plans might include explicit details for recalling off-duty personnel, chain of command or any other function assigned within the scope of the fire department's duties. Conversely, other fire departments prescribe general disaster plans which permit flexibility in each fire officers' decision-making process. In summary, there is no specified level of fire department disaster planning which will produce a guaranteed "good" plan. Each fire department must develop a plan which takes existing local conditions into account.

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[2] *A Perspective on Disaster Planning*, Russell R. Kynes and E. Quarantelli, Disaster Research Center, University of Ohio, 1972, Page 70.

Chapter 6

Types of Disaster Plans

Many types of disaster plans exist which, in some way, affect local fire department response. These plans vary in authority, scope and intent. Each plan originates from one of three governmental structures: federal, state or local government.

Federal Contingency Plans

Various agencies within the federal government have the legal duty to prepare for, and respond to, contingencies within the United States. Often these plans are implemented only in the event of disasters which spread beyond local or state government response capabilities.

The intent of most federal contingency plans is to provide the expertise, economic assistance or other services which otherwise would not be available from local government in a disaster situation. For example, the Disaster Relief Act of 1974 was designed to supplement the efforts and available resources of state and local governments and voluntary relief organizations. The President's declaration of a major disaster authorizes federal assistance and triggers other federal disaster relief programs. A presidential declaration of a major disaster makes a broad range of assistance available to individual victims of the disaster. This help can include temporary housing for disaster victims, minimum essential repair assistance and distribution of food coupons to eligible disaster victims. (See *Program Guide: Disaster Response and Recovery*, Federal Emergency Management Agency, Feb. 1980)

The National Oil and Hazardous Substances Pollution Contingency Plan was created following the Federal Water Pollution Control Act of 1972. Under the authority of the Act, the National Response Center (NRC) was developed within the structure of the U.S. Coast Guard. The NRC is the national focal point of the continuous response mechanism established by the plan and receives initial reports of discharges of oil, hazardous substances and hazardous materials. The NRC then passes this information on to the appropriate on-scene coordinator who is the federal official predesignated by a regional contingency plan to coordinate and direct federal pollution control efforts at the scene of a discharge. Several of the services provided to local government under the authority of this plan include the dissemination of reports on hazardous substance discharges to emergency services, provision of communications capabilities for regional coordinators, and plotting and displaying the locations, movements and extent of pollution incidents.

Many other federal contingency plans exist which supplement local emergency response to disasters. For the most part, these plans are designed to assist local fire departments. However, some federal contingency plans circumvent the authority of the local fire chief when the plan is placed in operation. It is important that each fire department identify the federal plan which might be implemented in the local area, and that a working knowledge of the plan's authority and objectives is known. In some cases, it is possible that local plans will work against federal plans rather than complement the intended assistance. Coordination of local plans with the applicable federal plans will prepare local fire departments for efficient mutual responses to the disasters.

State Disaster Plans

Each of the 50 states has a designated office which plans for disasters.[3] According to the National Governor's Association, "State governments have a very strong mandate to coordinate all aspects of emergency management. This mandate is translated into legislated authorities and extraordinary gubernatorial powers."[4]

These "legislated powers" are intended to permit the acquisition of available state and federal government resources. State resources might include technical experts for hazardous materials incidents, transportation vehicles for mass evacuation, the National Guard, or a multitude of other materials and personnel.

Many state plans are designed to assist local governments during disasters; therefore, it is imperative that a local government develop a plan which complements the state's plan rather than works against it. Likewise, the fire department must prepare its plan to complement state resources in the event that a disaster exceeds the capabilities of local emergency response.

In some states, the state emergency preparedness director has the legal authority to command all local government resources in the event the area has been declared a disaster area. When this occurs, the local fire chief might find that the fire department has the obligation to respond to direction from the state coordinator. Chain of command tactical procedures *must* be understood and agreed upon before a disaster occurs. Disagreement between local and state government officials must be worked out through sound disaster planning and not at the disaster scene. Therefore, local government officials should examine their respective state disaster plans thoroughly to assure a smooth transition of responsibilities during emergency response and disaster recovery.

Local Government Plans

During the five-year period covering 1973-1977, state governments reported 1,461 major emergencies or disasters.[5] (See Table 5). In each of these disasters, local government provided the structure for immediate response. Within this structure exists the resources necessary for disaster preparedness and immediate emergency response.

The potential for a given disaster at the local level seems to be limited only by what nature and modern technology can produce. It is quite appropriate then that the scope of disaster planning be as broad as the local government and the potential for disaster within its jurisdiction.

Regardless of the type of disaster or its magnitude, local government represents the first organized group affected by

[3]For a detailed report on the level of state involvement in disaster planning, see: *Comprehensive Emergency Management: A Governor's Guide*, National Governor's Association, Washington, D.C., 1979.

[4]*Ibid*, p. 15.

[5]*Emergency Preparedness Project, Final Report*, National Governor's Association, Washington, D.C., 1978, page 9.

disaster. Local government is expected to provide those services unique to each jurisdiction immediately before, during and following a disaster. These services can include, but are not limited to fire and rescue services, police, transportation, water, social welfare, sanitation and other daily "normal" services.

On one hand it is not difficult to imagine the chaos which accompanies a disaster such as a tornado. On the other hand, it might be difficult for some municipalities to envision the extent of involvement required by local government to cope with routine disaster problems. Typical problems include lack of electricity, restricted communications systems, destroyed water supplies and debris removal.

It should be obvious that extensive planning on behalf of local government is a necessity if a disaster is expected to be handled effectively and efficiently. Part of this planning process should involve an extensive cooperative effort among all local government agencies including police, fire and emergency medical services. It is equally important that each agency within local government understand the benefits and restrictions that other governmental plans might have on their respective missions during a disaster. As was stated previously, state and federal plans are designed to benefit local government. It must be the responsibility of local government to assure a smooth transition from outside mutual aid for the benefit of its citizens.

Table 5
Frequency of Occurrence of Disasters
(1973-1977)

Type	*Frequency*	*Percentage*
Wind	633	43%
Flood	313	21
Fire	125	9
Radiation	102	7
Snow	86	6
Utilities Failure	70	5
Drought	69	5
Pollution	32	2
Land Movement	19	1
Terrorism, Disorder	7	—
Epidemic	5	—
TOTAL	1461	99%

Fire Department Disaster Plans

Disaster planning at the local level frequently is the responsibility of such emergency response groups as civil defense, police and fire services. It is not uncommon to find a fire department with the sole responsibility for developing a community disaster plan. Quite often these plans deal with short-term emergency response details rather than the long-term effects of disaster.

Recently, however, there has been an increased emphasis on comprehensive emergency management (CEM). Comprehensive emergency management refers to the capability of managing all types of emergencies and disasters by coordinating the actions of many agencies. CEM addresses the total emergency management picture by examining all phases of a disaster, including mitigation, preparedness, response and recovery.[6] The scope of CEM requires total involvement of the local government and necessitates a community planning group or agency. This organization might consist of a selected committee, or an individual emergency preparedness group, staffed with one person or a complement of planning coordinators, supplemented by department heads within the local government. "A CEM program identifies agencies or individuals who have useful resources to bring to bear on all aspects of emergencies. It motivates them to apply their resources in the most productive manner, and it coordinates their disaster activities."[7]

The fire department plays a key role in the structure of local disaster preparedness and emergency response. It is expected to deliver emergency services in a time period which might involve extreme weather conditions, high stress and limited assistance from outside agencies. No single local government agency is called upon during a disaster to perform so many tasks in such limited time.

Red Cross and Other Voluntary Group Plans

In many communities fire departments work closely with their local voluntary organizations when disasters or fires force families from their homes. For example, the Red Cross and other voluntary groups with which the fire department might be coordinating its efforts, provide the next step in assisting families affected by the disaster.

In large cities, the relationship between the fire department and the Red Cross is well-organized and responsibilities are defined clearly. In smaller communities, where fires which create human needs are less frequent, and the need for Red Cross support only occasional, it might take a special effort to create and maintain an ongoing relationship, especially in view of the annual turnover of leadership in small volunteer fire departments and small volunteer Red Cross chapters.

Basically, the Red Cross is responsible for providing food, clothing, shelter and supplementary medical care on an emergency mass care basis and for providing individual family assistance with emergency needs. Additional help can be provided if a family's resources are inadequate and governmental resources are not available. The Red Cross also can provide canteen service-type support for fire fighters at large conflagrations or in other emergencies involving extended duty under extreme conditions. In many areas the Red Cross uses fire houses as shelter or aid stations and works closely with fire department auxiliaries.

There also are other voluntary agencies, primarily religious and church groups, that maintain disaster-related programs. At the national level these groups and the Red Cross coordinate their efforts through the National Voluntary Organizations Active in Disaster Relief. On the local scene these groups often are coordinated through, or work closely with the Red Cross, which mobilizes and uses their resources along with its own. (See appendix 2 for a detailed list of volunteer organizations.)

The fire service should make every effort to use the Red Cross and similar organizations by coordinating response efforts through cooperative disaster planning.

[6] For more details see: *Comprehensive Emergency Management*. National Governor's Association, Washington, D.C., 1979, Chapter 2.

[7] *Ibid*, p. 12

Section II
The Planning Process

Introduction

Fire department disaster plans normally receive the authority to perform disaster management functions from the local governments' basic plan. In the absence of a basic plan, the fire department might elect to prepare an independent disaster plan under the auspices of state law.

Regardless of the origin or authority, a fire department disaster plan exists to provide coordinated guidelines for emergency response actions taken by the fire department before, during and after a disaster. Primarily, these guidelines involve the fire service goals of saving lives, protecting property and the environment. Functions performed in support of these goals typically include fire fighting, rescue, and, in some cases, emergency medical services.

Most fire departments are familiar with their own day-to-day operations. Therefore, fire department plans should focus on emergencies which occur less frequently, such as tornados, flash floods or hazardous materials transportation incidents. By focusing on infrequent occurrences, members of the fire department will be better prepared to perform their assigned tasks. The absence of a fire department plan for coping with atypical emergencies quite often results in poor performance on behalf of the fire department. Lack of communications, poor command and control, and numerous other problems often are by-products of poor fire department plans.

As previously discussed, planning styles differ with each jurisdiction. Consequently, some fire departments are quite detailed with their plans while others are very general. No attempt is made within the context of this guide to endorse either style. However, subsequent chapters of this guide have been designed to address essential elements which should be included in every fire department's plan, regardless of style. Section II provides guidelines for preparing the fire department's plan.

As you read the following chapters, keep in mind that this planning guide includes general guidelines. By no means is this guide the final work in disaster planning. As the fire chief, one is encouraged to adopt, adapt, revise and seek improved methods of planning for a disaster.

*Formatting of this material derived in part from another Federal Emergency Management Agency sponsored effort: *Preparing for Environmental Emergencies* by Rockwell International.

Chapter 1

Elements of a Community's Disaster Plan

THE BASIC PLAN is a "blanket plan." It is developed by local government in response to the need for a structured and coordinated framework for emergency response to disasters which might occur within a specified local jurisdiction.

The content of the basic plan is based, in part, on a hazards analysis of the local community. This analysis examines the potential for a specific disaster and considers the community's ability to respond effectively. Each response agency, whether governmental or non-governmental, is examined for its expected role and its ability to cope with the anticipated disaster. From the hazards analysis, the fire chief can determine reasonably the expected outcome if a disaster occurred and existing community resources reponded. For example, if a hurricane destroyed a community's communications network, and no back-up communications system existed within the community, the basic plan would assume that outside assistance would be required. Based on this assumption, the basic plan would provide an assigned local government agency and authority to seek outside assistance. Further, the basic plan might specify from whom and where the additional equipment could be obtained. All assumptions made by the basic plan are based on currently existing resources and capabilities and not on assumed capabilities.

An important function of the basic plan is to "specify arrangements for direction and control by the executive concerned."[8] The plan should designate the person in charge of overall decision-making, as well as the mission of the individual agencies expected to respond. As an example, a basic plan might specify the city manager as the individual with the authority to make key decisions during a disaster. These decisions might include requesting mutual aid from the National Guard, writing emergency ordinances or evacuating the community. However, the plan also would assign the authority for specialized decision-making to the appropriate agency. That is, police-related decisions are made by the police chief, fire and rescue decisions by the fire chief and so on. Using this method, the basic plan delegates responsibility and authority to perform specific tasks to the agency best able to cope with a given problem.

In addition to addressing authority and control, the basic plan might include specific details pertaining to procedures for requesting federal assistance, community shelter allocation plans, warning systems or other areas requiring clarification.

Perhaps one of the most important characteristics of the basic plan is that its content has the authority of local law. A legally-endorsed disaster plan gives all agencies within the jurisdiction of the local government the authority to perform their assigned duties. For example, a fire department assigned the responsibility for executing local evacuation plans has a clearly defined "legal duty" to perform such a task if the basic plan provides the authority to do so. Without the legal authority to conduct evacuations, a fire chief's order to evacuate might be unenforceable by law enforcement officials. The scene of a disaster is no place for legal ambiguity.

[8] *Standards for Local Civil Preparedness*, Defense Civil Preparedness Agency, Department of Defense, Washington, D.C., 1972, page 24.

Chapter 2

The Need for a Planning Group

In most cases, a disaster situation will require interaction and mutual reliance on many different services. These services could involve those provided by federal, state and local governments as well as volunteer organizations, private businesses and industry. Obviously, a fire department could use any one of the previously mentioned groups on any given disaster.

If the fire department expects to use all available resources during a disaster, it must be familiar with the individual services, their plans of operation, and how to obtain them under unusual circumstances. It is quite appropriate and, in some cases, a necessity, that individuals representing these organizations have some level of input during development of the fire department's disaster plan.

The level and extent of participation of non-fire department agencies in the planning process will vary. Several advantages of including non-fire service organizations in the planning process are listed for consideration:

1. The fire department becomes familiar with other services available to support emergency operations.
2. The fire department can work out misunderstandings of authority, command, expected participation and assignments prior to an emergency.
3. The fire department gains a friend rather than an enemy. In a sense, the fire department's plan becomes their plan as well.

Planning Groups And Committees
Who Should Participate And How Do You Select Them?

As a general rule, documents such as telephone rosters, action guides, checklists and resource lists will be generated by governmental agencies in support of, or in order to tie into a more comprehensive plan which encompasses several agencies. These simple plans usually are written by a single individual, and a great deal of experience in planning is not required.

The more comprehensive fire department plans usually are written for the entire community, district or county and involve the coordinating efforts of several agencies and departments. In such a case it is appropriate for representatives from each involved agency to have some input into the planning process. This group of representatives becomes the planning group, but one person with authority, and responsibility must be identified as the plan coordinator. Depending on how they operate, these people might become a planning committee with a planning committee chairman. The distinction is that the:

Group Coordinator works with committee members and assembles input from other planning members into a final plan; the coordinator might draft and send out sections of a plan to appropriate agencies/departments for review and revision.

Committee Chairman functions by a series of meetings which might break down into smaller special working groups between meetings; review and revision generally occur by direct interaction of members.

Individual Group Coordinator — Committee Chairman

As the fire chief, the first choice for the group coordinator always should be a qualified planner, if such an individual can be identified within the fire department or within a related group or agency. Most types of planning experience, including urban planning, natural disaster planning and financial planning, will provide the basic planning approach. Few individuals within a given department will have actual experience in commanding disaster operations, but the important thing is to find someone who is well-versed in sound planning concepts and emergency service operations. If possible, the selected planner should be familiar with all functions of the community, group, or agency that might be involved in fire service operations, but this should not be a prime requirement. If a fire department or community is too small, or is organized in such a way that it does not include a planner, the next best choice is a *good organizer*. Look for a person who is organized and productive in the department. A person should be sought who gets the job done in complex group situations.

It sometimes might be the case that a key individual has superior knowledge of the total working structure of the community, including key contacts within each governmental sub-unit. This person then might be in the ideal position to write an emergency response plan for the fire department. In such a case, this key person would not assume an independent role, but would become the chief coordinator, supported by planning information provided by personnel from within each involved division or agency. Look for someone who is known for the ability to speed up government or community actions.

When looking for this individual, remember that a good fire ground officer is not necessarily a good planner.

Planning Groups And Committees

Planning groups usually are involved with developing emergency response and coordinating plans. It is typical for the group to consist of representatives from key agencies and organizations that have functions assigned to them in the plan. This representation is needed so that there is no doubt about an agency's duties, response capabilities and policy. Some agencies for possible inclusion are listed in Table 6.

Table 6

Primary Groups

City/County Manager
Mayor/Chairman of the Board of Supervisors
Civil Defense/Emergency Preparedness
Police Department
Public Works (Water, Sanitation, Roads, Waste Disposal)
Health Department
Representative From Volunteer Organizations

Secondary Group

Hospitals
Schools
Utilities
News Media

Keep in mind the distinction that committees make up the planning group: therefore, the following procedure is recommended for having both a dynamic and comprehensive planning operation.

Establish Both:

A Group
Large and comprehensive
Does not routinely meet as a group

A Committee
Small and Select
Meets regularly
Provides action and information on specific problems

Basically, the committee should write the plan of action and publish it. There are many names for this type of operation ("working group," "action team," "task force," etc.). Recommended committee members are:

1. The Committee Chairman: selected as previously described.
2. Representatives of:
   a. *The Fire Department:* representatives should be included from communications, operations, fire prevention, emergency medical, rescue and emergency preparedness.
   b. *Other Emergency Response Agencies:* those groups that actually are performing emergency functions in conjunction with fire and rescue operations.
   c. *Interface Agencies:* these agency representatives will coordinate the plan with such existing plans as civil defense, public health, hospitals and the Red Cross.
3. *A Reviewing Group:* for review of the final draft document. Suggested reviewers include the community's legal representative and non-participants in the planning process. In short, these people read the plan to see if it can be understood.
4. *An Editor:* someone to correct spelling, sentence structure, etc.

Keep the committee small. Let the committee members get in touch with other agencies (group members) and involve them as the plan is developed. Maintain a separation of committee and group. Each is important, but do not let one interfere with the workings of the other.

Sometimes the committee can be small if some persons are willing to assume more than one role (for example, the representative from fire prevention also might be the emergency preparedness representative).

Many small communities, operating with volunteers in many of their government roles, will look at the list above and see their total qualified personnel resources listed. In some instances this is good, because these people probably are working together on a daily basis. However, there also can be problems in this situation; not the least of which is finding the time for committee participants to conduct meetings.

Chapter 3

Planning Problems

Before the planning process is described, it is important to anticipate planning problems. Developing a fire department plan which will be practical and functional during a disaster will require the involvement of many individuals. Fire chiefs are not strangers to problems created by conflicting personalities, vested interests and political structures. It will be unusual if disaster plans are developed without problems. Therefore, this section is intended to supply some basic recommendations for handling these "normal" problems.

Problems With The Individual

When an individual or a select group is assigned the task of writing a plan, the possibility exists that not all appropriate information will be included in the plan. The plan also might be slanted or biased unknowingly by the authors, to reflect their own views and opinions which might not be the consensus of the planners. These problems can be lessened if the planners remain in close contact with all of the involved group, and areas of questions are identified early in the planning process. Frequent review of ongoing work by the involved agencies is another good idea. A final review, with a checklist, is essential if a single individual is doing the planning. In some cases the plan outline will serve as a good guide for a checklist.

Problems With Committees

Committee planning probably will ensure a comprehensive planning effort. However, there are some pitfalls which need to be avoided in the process. Committees tend to work at a relatively slow pace, and this is probably for a variety of reasons. The progress of a committee usually is limited by its slowest member. The committee chairman should monitor progress and step in when help is needed. Also, committee planning meetings, a necessary element of the process, often do not make the best use of available time. Meetings can be unproductive if planning members are bogged down by inappropriate issues. Occasionally, when several agencies or groups sit down at one table, the meeting can become a battleground for personal differences and other grievances fueled by long-standing interagency rivalries. Two classic cases within the fire service are the almost unavoidable, and traditional exchanges between volunteer and career personnel and rivalries between fire and police services.

This guide does not attempt to offer any blanket solutions to these problems because such solutions do not exist. Each planning committee chairman must handle individual situations. The intent of this section of the planning guide is to bring possible problems to the chairman's attention so they can be anticipated.

Problem Areas And Suggested Approaches

Under most circumstances, the climate for planning will be less than ideal. Problems are inevitable when a group of people get together who are limited by time, money and personal constraints, and complicated by differences of opinion and a divergence of political views.

As a planning group, the following thoughts should be kept in mind when confronting problems:

1. The group's common goal is important to the health and welfare of the community. Every effort should be made to achieve this goal.
2. Solving problems often involves *compromise*. Remain flexible. Meet opposing ideas or persons halfway.

The following is a list of typical planning problems, along with possible solutions for resolving these problems. This entire list should be studied prior to initiating the planning process. Advance awareness of problems and solutions sometimes is a good safeguard against their occurrence.

Planning Problems	Possible Solution(s)
Responsibility Conflicts	— Prepare interagency or intergovernmental agreements. — Use a neutral party mediator. — Review agency charters to clarify duties and roles, revise legislation if necessary.
Lack of Planning	— Hold frequent planning meetings.
Coordination	— Invite more groups into the planning process. — Select a planning authority. — Select appropriate planners. — Follow a planning guide.
Confusion over Regulations	— Obtain higher governmental authority assistance. — Pass legislation to clear up confusion.

Planning Problems	Possible Solution(s)
Difficulty in Obtaining Plan Approval/Excess Red Tape	— Follow proper plan reviewing procedures. — Review previous planning efforts. — Pass an ordinance streamlining planning process.
Planning/Response	— Maintain planning records.
Personnel Turnover	— Frequently update plan. — Schedule regular training exercises.
Difficulty in Identifying Technical Assistance Resources	— Follow a planning guide. — Obtain planning assistance from a higher authority.
Community Interest Lacking	— Publicize a hazard analysis. — Hold public hearings.
Insufficient Legal Support	— Pass local/state ordinance.
Lack of Funding	— Obtain state/federal planning assistance. — Finance planning through bonds, taxes, or other charges.
Setting Up Planning/Organizational Structure	— Review civil defense planning procedures. — Determine type of plan desired. — Determine a planning authority. — Issue a planning directive. — Determine current planning capabilities. — Select appropriate planners. — Follow a planning guide.
Lack of Full-Time Planning Commitment	— Locate additional funding sources. — Obtain state/federal planning assistance. — Hire a planning consultant. — Adjust scheduling.
Failure to Tailor Plan to Local Needs	— Perform a hazard analysis for the area in question. — Forecast community needs. — Identify resource needs and availability.
Difficulties Planning For a Large Constituency	— Hold a series of public meetings. — Use third-party mediation to resolve conflicting views. — Clearly define planning priorities.
Problems Maintaining the Planning Schedule	— Select a planning authority to establish a firm schedule. — Maintain disaster planning as a high-priority item in the community.

Chapter 4

Hazard Analysis

Basic to the planning, no matter how simple, is an understanding of the problems that should be anticipated in the specific jurisdiction. A hazard analysis should be the first step in the planning process. This analysis then becomes part of the plan.

A hazard analysis:

- Lets the fire department planner know what to expect;
- Prevents planning for unnecessary events;
- Provides incentive for the department
- Might indicate preventive measures;
- Creates an awareness for new hazards.

Procedure for Hazard Analysis

A suggested procedure for hazard analysis follows and details of what to include as part of the plan content are provided.

There are three basic parts to a hazard analysis dealing with potential disaster situations:

1. Consideration of the potential for specific disasters.
   Example: Does the community have the potential for an earthquake?
2. Evaluation of the potential harm resulting from the disaster.
   Example: Will water supplies be destroyed by the earthquake?
3. Evaluation of the resources required to respond to the disaster.
   Example: Will the fire department have the personnel and equipment to respond to the disaster?

The following approaches to completing a hazard analysis are suggested:

1. Assign the job of evaluating the potential for disaster to a team of operations officials. A representative team could consist of fire officers from each battalion, district or section of the city. The primary consideration is to have the community represented geographically.

2. If the team does not already have information, consult the local or state civil defense/emergency preparedness office.

3. After identifying potential disasters, evaluate them for their potential harm. (An evaluation exercise has been provided as a guide in appendix 3.) When considering the potential harm be sure to include:

A) threat to lives;	B) property damage;
C) environment;	D) economic systems

4. Use a 1:24,000 scale U.S. Geological Survey map for indicating such special problem areas as flood planes, problem evacuation areas, hazardous materials routing, life hazards, etc.
5. Evaluate the fire department's resources. Consider the personnel required for performing such tasks as fire fighting and rescue. Inventory equipment for the job and evaluate its ability to perform the task. For example, if the department maintains 20 body bags and the anticipated maximum casualty rate from an air crash is 120, where will the additional bags be obtained?
6. Prepare a written description of what potential disasters exist, the ability to respond to these incidents and recommendations to the planning committee for planning for similar disasters.
7. Estimate the probability of a potential disaster and rank priority planning areas.

Time and resources probably will dictate the depth and extent to which the hazard analysis is carried out. At one end of the spectrum will be the case where the evaluation team simply gives its assessment based on whatever knowledge it already has; at the other end, department-wide surveys might be conducted and a long series of scenarios gone through to assess possible vulnerability. Regardless of the detail involved, do a hazard analysis. Even the simplest analysis will be a planning effort.

When the hazard analysis is complete, the fire department planner should be able to make the following decisions:

1. The type of planning desired, i.e., a detailed plan or a general plan.
2. What types of response to emphasize.
3. What resources will be required to fulfill that response.
4. The type and quantity of mutual aid and support services which might be required outside the normal fire department services.

Chapter 5

Reviewing Existing Plans and Responsibilities

A. Existing Plans

Section I provided an overview of the various types of disaster plans which the local fire department could use in the event of a disaster. A check should be made to determine the existence of current or even outdated emergency response plans or information. These plans could be mutual aid agreements, planning guides, action guide/checklists, natural disaster plans or informal, unwritten plans. These plans can originate from within the department, nearby communities, county, state and federal agencies, planning authorities, industry and volunteer organizations.

The primary reason for obtaining and reviewing these plans is to develop an awareness of current emergency planning and response information to avoid duplicating previous work efforts and to ensure proper interaction with other plans. It might be helpful to obtain a plan from a fire department of similar size and disaster potential. Elements of another plan might give the fire department planner some indications of items that should be in his or her plan. However, it is undesirable to rely exclusively on other plans when preparing this plan. Every fire department has unique and characteristic problems which must be addressed from a local perspective.

B. Identifying Functions Of Support Services

All organizations capable of providing immediate active personnel and material support in the event of a disaster must be identified. When doing the planning as an individual, use the phone to determine what each can do. As a starting point, contact primary response agencies, then secondary response agencies. These groups can provide direct information or referral to other sources of information. When working with a planning committee, the key response group already will be members of the team and probably can provide the information directly. If not, split the list up among the team and let them get the information.

Determine the response capabilities of the various agencies.

Ask questions about:

- personnel assigned;
- equipment available;
- existing plans;
- defined responsibilities and duties;
- existing mutual aid or interagency agreements;
- internal chain of command.

Once this survey has been completed, organize the data in a table or some other convenient form to facilitate making an overall assessment of the functions of support services.

C. Identifying Responsibilities And Coordinating Response Assignments

Certain governmental agencies have legal responsibility, jurisdictional authority, charters, interagency agreements, or, in some other manner, have been delegated a response role in an emergency situation. Therefore, when planning assigned tasks, care must be taken to ensure that the assignments are in accord with legally-mandated responsibilities and that there are no contradictions or unnecessary overlapping of duties.

When sorting out emergency roles in different agencies and organizations, logic is the key word. The various necessary emergency response and support functions should be assigned to agencies most logically capable of dealing with them. Some assignments will be obvious, such as law enforcement. However, some duties, e.g., transportation, might require deeper searching to determine which agency or agencies are thought best equipped to handle the situation.

A basic rule should be observed when making task assignments. List all the jobs that will need to be done — not just the response tasks — first. Then, under those tasks, list the agency or agencies that will do something to see that the job gets done. Do not reverse the process.

D. Identifying Deficiencies

Once both resources and emergency response capabilities have been identified, deficiencies should be identified. In other words, can everything be done that needs to be done? The fire department planner should see if all emergency response tasks are covered, and check again with the appropriate agencies or organizations if he or she either is unsure or if something seems to be missing.

In some cases, deficiencies can be identified which might not permit the desired response to a particular emergency. If this occurs, the deficiency should be specified and recommendations made to whomever is in authority. If the missing item obviously falls to a particular department or agency, then:

- Simply point out the problem to the agency head, and ask that the function be accepted.
- Suggest a rearrangement of duties within or among agencies to use a particularly pertinent resource.
- Explore mutual aid agreements with neighboring agencies or departments.
- Try using outside organizations, either on a contractual or volunteer basis.

If the problem requires a solution on a higher level, suggest:

- Passing a new law or ordinance, or changing existing statutes;
- Appropriating additional funding for emergency response activities and planning;
- Looking for innovative sources of aid; or
- Seeking federal, state aid or both.

If the preceding measures prove either technically or politically not feasible, or do not pertain to the department's situation, adjust the scope of the task assignment to fit present capabilities. It is better to know what can and cannot be done, rather than having an unrealistic vision of what would be desirable.

Chapter 6

Writing and Scheduling a Plan

There are several approaches to writing a fire department plan, depending on the type of plan desired. Telephone rosters, action guides and checklists, resource and equipment lists, and unwritten, informal plans are relatively narrow in scope and usually require only one or two people to be involved in the actual writing of the plan. However, response plans and coordination plans are more expansive in scope and comprehension and generally require more persons involved in the writing task.

When preparing to write a comprehensive plan involving the fire department and several agencies, there are a couple of methods to consider:

1. The responsibility for writing the plan can be delegated to one qualified individual. The designated individual should work with each involved fire department section or support agency on a "one-to-one" basis to develop the input for writing the plan.
2. Each section or agency can write its own section of the plan with individual writing efforts being coordinated in a series of workshop meetings.

The first method might burden the single writer with an inordinate amount of work, thus driving the writer into frustration and delay. This approach does, however, produce a uniformly written package. This will reduce measurably the time spent for editing, a task which will be necessary if the second approach is selected.

The merits of the second approach lie in the inherent advantages of the group process. The necessary workshops provide a greater opportunity for awareness, teamwork and cooperation among those who will be performing critical emergency response tasks during plan activation.

Consider a series of approximately three workshops for writing and reviewing the plan. Schedule the meetings in a realistic manner, noting the normal working duties of the persons writing each section. It is not wise to stretch the writing process over too much time. The urgency and motivation for writing can dissipate when excess writing time is allowed.

The chairman should schedule and set agendas for each meeting *well in advance*. The meetings can be patterned after the following outline:

Meeting 1. Assign primary response agencies the task of writing the duties and responsibilities section. Between Meetings 1 and 2, these individuals probably will want to contact group advisory personnel or meet with the support agencies to define further their respective roles.

Meeting 2. Written reports are submitted. Representatives from each section brief the group on the contents of its report. Differences are worked out and the written sections are finalized, in support of the existing standard operating procedures. This will ensure close coordination with normal response duties. Between meetings, meet with group advisors or support agencies as needed.

Meeting 3. Each agency presents a final briefing and submits its documents for review.

NOTE: The preceding meeting scenario is given only as an example. More or fewer workshop sessions can be scheduled, depending on the individual situation and plan output.

Plan Content

When the type of plan has been determined, it is time to outline the kinds of information each plan will contain. Included in the following list are major sections found in approximately 300 disaster plans reviewed during this project. It is not mandatory that all plans contain the exact sections indicated. The list has been developed to provide planners with a set of guidelines indicating what can be included in different types of plans.

The subject headings are listed in the order recommended for the fire department plan. The emergency response notification section always should be placed on the front cover or the first page to facilitate access to this vital information.

Section	*Contents*
A) Emergency Response	• Emergency 24-hour telephone number • Emergency notification information — locations of personnel — notification network
B) Record of Amendments	• Change record sheet • Date of change • Recording signature • Changes made
C) Letter of Promulgation	• Preliminary remarks
D) Foreword/Preface	• Preliminary remarks — general background information — planning philosophy — intent of document
E) Acknowledgement	• Identification of plan contributors

F) Table of Contents	• List of topical sections, figures and tables
G) Disaster Assistance and Coordination	• Use of outside resources — response capabilities — contingency plans — predetermined arrangements
H) Procedure for Changing or Updating Plan	• Responsibility • Change notification procedures • Change frequency
I) Plan Distribution	• List of organizations receiving plan — governmental agencies — fire department sections — mutual aid companies
J) Hazard Analysis	• Probable disaster types • Vulnerable locations • Frequency/probability of occurrence • Identification of high risk areas
K) Detailed Planning Section	• Natural disasters • Man-made disasters
L) Bibliography	• Referenced reading material for: — disaster operations manual — communications manual — standard operating procedures — outside readings • Legal references — planning authority — special laws — emergency ordinances
M) Training Exercises	• Guidelines for: — logistics drills — command and control for disasters — hazard awareness exercises

A. *Emergency Response Notification*

This section is designed to provide the planner with quick-reference emergency telephone numbers. This emergency response section should be brief, easily accessible and simple. Appendix 1 provides a sample style of an emergency notification telephone resource list.

B. *Record Of Amendments*

Maintaining an up-to-date version of the plan is of prime importance. When corrections, additions or changes are made, they should be recorded in a simple bookkeeping style so all plan users will be aware they are using a current plan.

All that is necessary for this page is a set of columns indicating dates of change, changes made and the signatures of persons making the changes. It also is a good idea to include on this same sheet a notice of where to report changes.

C. *Letter of Promulgation*

This letter delineates the legal authority of the person(s) responsible for putting the plan into action. The letter usually is signed by the chief of the department for the jurisdictions covered by the plan.

D. *Foreword/Preface*

This section can be included to give preliminary or introductory information that will not be addressed in the body of the plan. This information can consist of background information or a statement of the plan's intent.

E. *Acknowledgements*

This section can be used to identify and congratulate specific members of the planning and response teams.

F. *Table of Contents*

The table of contents section is self-explanatory. Page references should be used to ensure that key sections can be located quickly during emergencies. Critical maps, charts, figures and checklists must be identified clearly. Consideration must be given to the conditions under which the plan might have to be read.

G. *Disaster Assistance and Coordination*

This section should outline the procedure for obtaining outside resources and their response capabilities, plans and predetermined arrangements. The format should be brief and might be useful as an instructional aid or training guide for emergency personnel.

H. *Procedures For Changing or Updating a Plan*

Fire department personnel should be made aware of department procedures for changing or updating a plan. This is especially important if company level officers are involved in

a close working relationship with the community. For example, an engine company on an inspection of a hazardous materials storage facility is usually the first fire department representative to come in contact with a problem which could affect the disaster plan. A system for passing information on to the appropriate authority should be in place.

Responsibility should be delegated to someone to ensure that the plan is updated frequently and that all plan holders are informed of the changes. Someone at the command level should check periodically (at least every six months) to see if stockpiled resources are available as indicated in the plan.

I. *Plan Distribution*

The plan distribution list should account for all organizations, sections and fire stations receiving copies of the plan. This information is essential when determining to whom revisions and changes in the plan should be sent. It also is important for each group on the list to be aware of who has access and reference to the plan. This awareness will promote a coordinated emergency readiness among the various outside agencies.

J. *Hazard Analysis*

This section can include abstracts from reports of the previously described hazard analysis team. These abstracts should be brief and include hazard locations, predicted adverse effects and the probability of the hazard's occurrence. This information could serve as the input for potential disaster drill sites or as a training guide for in-station company drills.

K. *Detailed Planning Sections*

Detailed planning sections (sometimes referred to as Annexes) should contain a list of specific actions to be taken by the fire department. Detailed checklists can be prepared for emergency response to a variety of disaster types. Section VI supplies suggested guidelines for preparing these sections.

L. *Bibliography*

Much information has been published on different types of disasters. For an emergency response organization it could prove useful to maintain a technical library at a convenient location to serve as a reference source and instructional tool. By publishing a list of suggested readings in the fire department's disaster plan, members can refer immediately to a reading which describes a procedure, or operational problem. Easy access to the readings might stimulate training and personal advancement.

M. *Training Exercises*

The purpose of this section is twofold. It serves to keep response personnel aware of their duties and tests the adequacy of the plan. A major training tool can be simulated exercises in which emergency response personnel act out their duties, test communications equipment and deploy other equipment.

Additionally, the training exercise section should help company-level fire fighters understand their specific circumstances. Several sample exercises are supplied in appendix 3.

Chapter 7

Plan Appraisal and Continuing Planning

1. Plan Review and Approval

Once the disaster plan is assembled, it can be reviewed using four methods: self-review, peer review, committee review and higher-level approval.

A. *Self-Review*

Self-review means going over the plan personally to see that it is right from the point of view of the fire department planner.

B. *Peer Review*

A peer is someone whose capabilities are equal to one's own. However, it is to the department's advantage to find someone who has extensive experience in disaster operations and planning, and is well-versed in fire department operations.

When looking for a peer reviewer, try to find an individual who is honest, objective, conscientious and has an understanding of the requirements of the plan.

If peer review is used on a plan being prepared by a committee, it is wise to try to identify the review early and include the individual in the committee from the beginning. This will ensure that he or she understands the scope and purpose of the plan.

C. *Committee Review*

Committee review makes use of the same committee that prepared and submitted the individual parts of the plan. Committee review does not allow the plan to suffer from the "it's finished, so it's all right" trap into which self-review plans can fall. Committee members are asked to review the total plan (and they will be critical of all parts of the plan except parts written themselves).

Committee reviewers should be given the following instructions:

1. Use checklists if they are available.
2. Be as honest as possible.
3. Without fail, a) if something is expected from another organization or person as part of the action to be taken, make sure that it is spelled out and understood by that organization in its part of the plan, or by other identifiable agreement; b) if another organization or person expects something of one's own organization, make sure to know what it is, and be prepared to do it.
4. Set a deadline for comments. However, ask any agencies/groups/persons who discover problems to work out the appropriate revisions instead of saying, "it isn't there" or "it can't be done."

D. *Upper-Level Approval*

Upper-level approval generally means submitting something to one's supervisor and obtaining his or her approval and signature. In some cases, one's supervisor(s) might be the board of fire commissioners, the standing committee, the mayor, county executive or the city manager. Regardless, make sure the supervisor has the proper tools to make a proper review.

1. It is important to remind the supervisor of the original constraints and conditions imposed.
2. Complete peer or committee review, and submit those results with the plan prior to gaining upper-level approval.
3. Suggest the use of a checklist.
4. Set a deadline which allows enough time. Specify a date for return and, if necessary, explain time constraints.

E. *Chief's Final Review*

After the supervisor's review is complete, the fire chief will have to make some final decisions about what to change or revise. Consider any final omissions, additions, alterations, incorrect statements, contradictions, labor problems, etc.

F. *Maintaining an Up-to-Date Plan*

All plans can become outdated. People change jobs, volunteers drop off the active roles, new telephones are installed, new equipment is purchased, old equipment discarded, companies go out of business, and department and agency responsibilities change. Keeping a plan up-to-date is difficult unless there is a high frequency of disasters and frequent use of the plan. Interviews with state and local officials have revealed that plan updating is one of the biggest problems, if not the single biggest problem, of disaster planning. Remember that the disaster plan is simply a piece of paper. However, disaster *planning* is a dynamic, ongoing, process. If a fire department never reviews, updates, and revises its planning document, then most likely it has an obsolete, worthless disaster plan.

Use as many of the following techniques as possible to keep the disaster planning process continuous—and think of adding others.

1. Establish a regular review period, preferably every six months for the planning document and quarterly for phone numbers. Phone numbers can be checked by communications personnel simply by dialing the number. Another method is to submit the telephone list to the telephone company and ask them to check these numbers with its computer.
2. Make one person or one department/branch responsible for review. Choose with reliability in mind.
3. Choose another person/department/branch to whom the results of the review must be reported, in addition to the normal distribution changes.
4. Include a *Record of Amendments and Changes* sheet in the front section of the plan. When changes are sent out, plan-holders should have, as a minimum, space to enter the following items: Date, page affected, nature of change.
5. Include a "Where to Report Changes" notice in the plan, and a place for plan-holders to report any changes or suggested revisions to whomever is responsible.
6. Make any sections of the plan subject to frequent changes easily replaceable (looseleaf, separate appendix, etc. or provide blank space (double-or triple-space typing), so that revisions and changes can be

made. This applies particularly to telephone rosters and resource and equipment listings.

The responsible person/department/branch described in #2 above, should do the following:

1. Maintain a list of plan holders based on the original distribution list, plus any new copies made or distributed. Copying machines are available readily, therefore it is wise to send out a periodic request to department/branches showing who is on the list and asking if anyone should be added.
2. Check all telephone numbers, the names of persons with particular responsibilities, equipment locations and availability, etc. In addition, ask departments and agencies to review sections of plans which define their responsibilities and action.
3. Distribute changes and give specific instructions about the changes such as, "Replace page XXX with the attached new page," or "cross out XXX on page XXX and write in the following information."
4. Send a letter periodically to all plan holders, regardless of changes and ask them to to record its receipt. (see appendix 1).
5. Request an acknowledgement of changes from persons to whom revisions were sent. This can be done by including a self-addressed, returnable sheet ("I have received and entered changes dated ___. Signed (whomever)."") (see appendix 1).
6. Attend any plan review meetings and issue changes as indicated.

Chapter 8

Detailed Planning Sections

I. What Are Detailed Planning Sections?

Detailed planning sections describe specific procedures for performing fire department disaster response functions which normally are not part of the day-to-day routine emergency functions.

These sections are detailed but should be brief, i.e., the sections must, as much as possible, use a minimum of words.

II. Suggested Planning Sections

The type of detailed planning section will vary with the department's training, personnel, command structure, etc. However, the review of nearly 700 fire department disaster plans showed they usually included the following details:

A. *Mutual Aid* — details on how to obtain fire and rescue mutual aid; authorization procedures for requesting additional companies, personnel.

B. *Recall of Personnel* — describes in detail a method for recalling off-duty fire department personnel, where they should report, responsibility for initiating a recall and company staffing levels.

C. *Task Force Assignments* — describes the assignment of personnel with limited fire apparatus, personnel and fire suppression agents and emergency medical equipment and personnel.

D. *Limited Evacuations* — describes procedures for conducting limited evacuations of citizens from life-threatening areas of one block to the neighborhood level for temporary time periods.

E. *Total Community Evacuations* — describes authorization, liaison with risk and host communities and detailed operational guidelines for total evacuation of citizens from an affected or potentially affected area for long periods of time. (See Section III for special guidelines.)

F. *Relocating Emergency Response Units* — provides details for relocating fire suppression and emergency medical units because of potential or actual disasters in the community such as hurricane, enemy attack, hazardous materials incidents, nuclear power plan incidents or long-term environmental emergencies.

G. *Continuing Planning*

As stated previously, "The planning process should never stop." The first step in continuing planning was treated as a separate item earlier, because it is an extremely important and difficult item with which to deal. Additional steps in continuing plan improvement are:

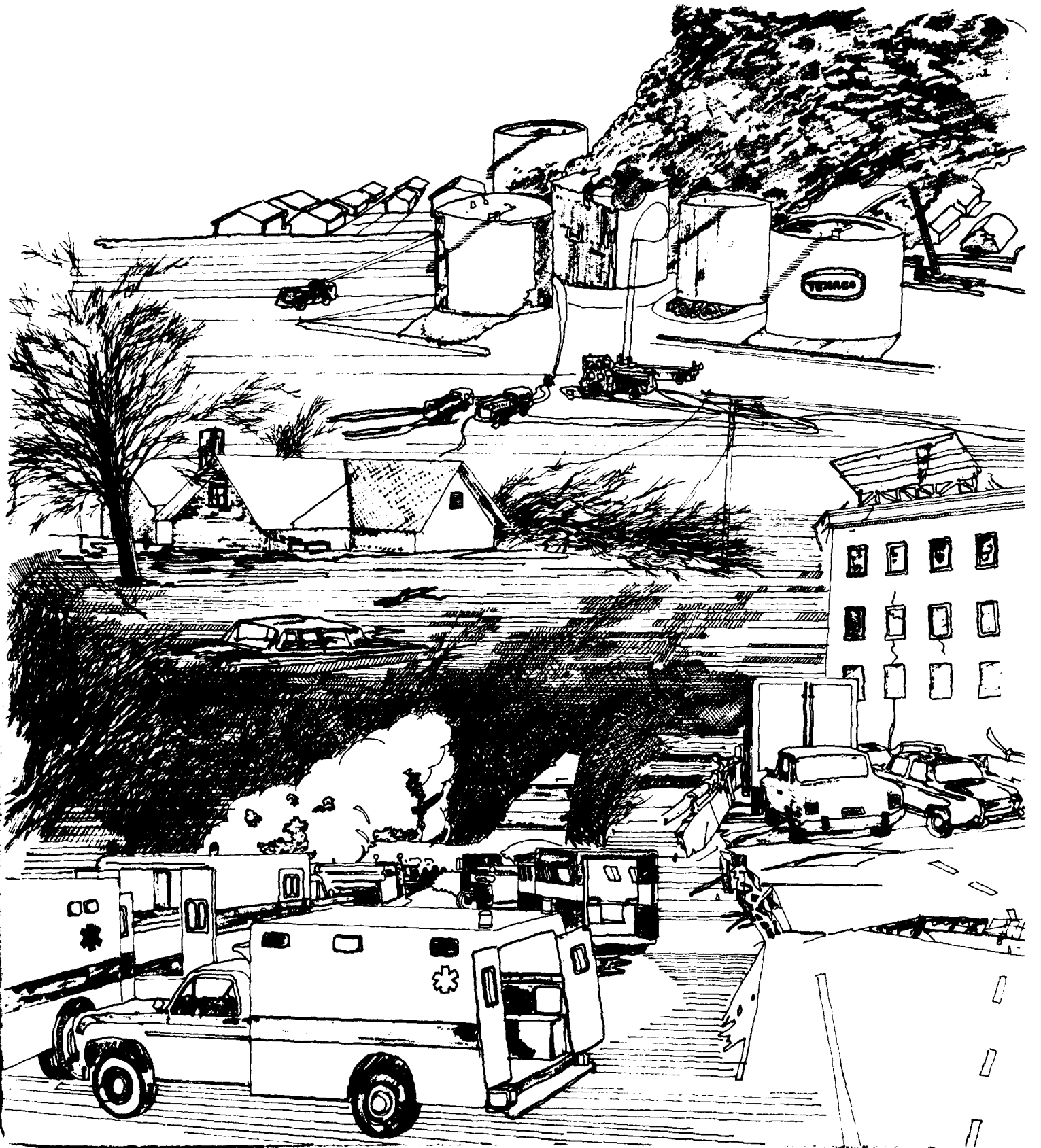
1. Incident Reviews and Critiques
2. Exercises
3. Training Courses

Incident reviews and critiques should be held after an actual disaster. The basic idea is to find out if anything has been overlooked. Suggestions on critical review follow.

1. The person in charge of plan updating also should be responsible for conducting the incident review.
2. Let the dust settle before conducting a review and wait until at least a week has passed to give people a chance to get minor irritations out of their systems and recover physically and mentally.
3. Hold criticism and incident review meetings when everyone in attendance is capable of giving and accepting truly constructive criticism. Otherwise it is possible that the meeting will degenerate into accusations, confrontations, recriminations, and timid silence, particularly if things are disorganized. And that is exactly when feedback is most needed — after things have become chaotic.
4. Send a questionnaire letter to as many people involved in the disaster as possible for comments and suggestions. Again, a self-addressed mailing form should be included to keep responses confidential.
5. A failure to answer the planner's request for comments can in itself indicate a problem. A follow-up phone call should be made.
6. Look for true plan deficiencies: things overlooked, improperly identified, or which simply did not work in the way intended.
7. Many personnel or departmental deficiencies can be pointed out in response to the request. Failure to communicate, slowness to respond, not knowing the job, etc., are problems, but are not planning problems. Handle each problem separately or informally discuss the problems with the appropriate parties. Do not compound problems by sending out retaliatory letters.
8. If a true deficiency is uncovered, get the correction process started immediately. Request that the appropriate person rewrite the problem section or have it revised by the planner.

Section III

Planning Guidelines For Specific Disasters



Introduction

Section III of this planning guide has been prepared to aid the fire chief in developing guidelines for specific types of disasters.

Guidelines for each type of disaster are arranged in a logical sequence which follows the order in which events might occur or the sequence in developing a plan. The reader should remember that these guidelines *are not* plans for specific disaster types, rather, they *are* a series of recommended items to consider when developing a plan.

No specific style has been adopted for presenting these guidelines nor are they complete. Each guideline has been designed to address the needs of the fire chief. These needs are based on the IAFC's disaster planning survey. Therefore, the planner will find some guidelines general in nature and others more specific.

In order to make these guidelines effective, each fire chief should check the department's existing or newly-adopted plan and identify the presence of key points contained in this section. In this way the guidelines can be used as checklists for convenience.

If, during the preparation of a specific disaster plan, one is not familiar with the operational problems, behavior of the disaster type, or simply wants to learn more about the cause and effects of natural or man-made disasters, refer to the bibliography. For example, if the hazard analysis reveals that the specific jurisdiction has the potential for an earthquake and personnel are not familiar with characteristics of earthquakes, refer to the bibliography for suggested readings on this subject.

Chapter 1

Checklist for Water Disaster

Definitions

Flood Watch — Conditions that could combine to make a flood possible.

Flood Alert — Conditions have combined to make a flood possible.

Flood is Eminent — Flood is certain to occur.

Preparatory Period

1. Review and revise the plan for handling a water disaster with the proper authorities.
2. Cooperate in planning with other communities to establish or reaffirm mutual aid agreements.
3. Identify potential water disaster areas. (Consult floodplain map if available.)
4. Notify fire department personnel of potential water disaster areas.
5. Review standard operating procedures for water emergencies.
6. Train fire department personnel in water disaster operations, e.g., water rescue, explosions, gas leak, electrical, cave-ins, sewers.
7. Establish and maintain an inventory of resources and their locations.
   Example: Regular and auxiliary pesonnel, public and private equipment (boats, helicopters).
8. Notify all fire department personnel of *"Flood Watch."*
9. Prepare for water, food and electrical shortages.
10. Ensure that fuel requirements for equipment will be met.
11. Notify all fire department personnel of *"Flood Alert."*
12. Advise news media of fire department plans.
13. Recall off-duty personnel according to standard operating procedures.
14. Assign and inspect boats to be used. Use local Coast Guard auxiliary or waterway patrol officer for inspections.
15. Evacuate all low areas of the community which have potential for water disaster.
16. Notify evacuees to shut off utilities before they leave.
17. Assist with evacuation of ambulatory patients.
18. Secure stations in potential water disaster areas and evacuate.
19. Move all fire fighting equipment to strategic points with access to all parts of the area threatened. (Consider small bridges unreliable for access in most cases.)

Flood Eminent Period

20. Notify fire department personnel of situation.
21. Require all fire department units to report hazardous situations. (Maintain radio contact.)
22. Call for mutual aid if necessary.
23. Continue fire department operations where possible.
24. Utilize boats and helicopters when other rescue procedures cannot be used.
25. Confine and extinguish all fires where possible.
26. Monitor water supply resources (hydrant pressures).
27. If flood water is to be used for fire protection, it must be monitored constantly for contamination from flammable or combustible liquids.
28. Arrange for dry clothing as required.
29. Establish food service for fire department personnel.
30. Establish sleeping quarters for relocated personnel.

Flood Receding Period

32. Notify fire department personnel of cresting point.
33. Contain and extinguish all fires as required.
34. Conduct primary and secondary search for victims.
35. Administer inoculations as necessary for waterborne diseases.
36. Reopen closed stations.
37. Assist returning evacuees.
38. Release mutual aid units.
39. Release auxiliary and off-duty personnel.
40. Take inventory.
41. Report losses of equipment. Duty officer should try to keep a running list on the daily log.
42. Criticize operation.

Chapter 2

Tornado Checklist

NOTE: Tornado warning periods normally are 3 to 15 minutes. Therefore, preparation should take place prior to tornado seasons.

Preparatory Period

1. Review and revise disaster plan with the proper authorities.
2. Cooperate in planning with other communities to establish mutual aid agreements.
3. Train fire department personnel on tornado disaster operations. Use standard operating procedures as a training guide.
   Example: Clearing streets, search and rescue in collapsed buildings, gas leaks, wire arcing, mass casualties, major conflagrations, water supply shortages.
4. Establish and maintain an inventory of resources and their locations.
   Example: Regular and auxiliary manpower, public and private equipment (especially tires for apparatus damages due to broken glass.)

Tornado Watch Period

1. Notify fire department personnel of situation.
2. Secure all in-service equipment.
3. Prepare for water, food and electrical shortages.
4. Prepare for breakdown in communications.
   Example: antennas blown down.
5. Ensure fuel requirements will be met.

Tornado Alert

1. Notify fire department personnel of situation.
2. Prepare to take shelter.
3. All fire department units should establish tornado watch from strategic observation points.
4. Check operation of chain saws and change rotary saws to wood blades for tree removal.

Tornado Strike Period

1. Fire department personnel take shelter.
2. Fire department units report damage to equipment and personnel.
3. Fire department units respond to incidents requiring search, rescue and fire operations if possible.
4. All off-duty personnel report to duty according to standard operating procedures.
5. All units report damaged areas and extent of damage.
6. Watch for looters and report incidents to police.
7. Request mutual aid units if needed.
8. Assist in shutting off utilities and clearing roads. (Form tree clearing task force groups, clear priority roads first.)
9. Supply food to fire department personnel as needed.
10. Supply fuel to fire department units as needed.
11. Continue operations until all hazardous situations are under control and all areas have been searched for victims.
12. Release mutual aid units.
13. Release off-duty personnel.
14. Take inventory.
15. Report losses.
16. Criticize operations.

Chapter 3

Hurricane Checklist

Preparation Period

1. Review and revise procedures for hurricanes with proper authorities.
2. Cooperate in planning with other communities to establish and reaffirm mutual aid agreements.
3. Identify areas with potential for water disaster.
4. Notify fire department personnel of potential water disaster areas.
5. Review applicable standard operating procedures.
6. Train fire department personnel in high-water and high wind operations.
7. Establish and maintain an inventory of resources and their storage locations.
   Example: Regular and auxiliary personnel and public and private equipment (boats).

Hurricane Watch Period

1. Notify fire department personnel of situation.
2. Prepare for water, food and electrical shortages.
3. Prepare for breakdown in communications (antennas blown down).
4. Ensure that fuel requirements for fire equipment will be met.

Hurricane Alert Period

1. Notify fire department personnel of situation.
2. Allow fire department personnel to ensure family safety.
3. Assign and inspect all boats to be used.

Hurricane Eminent

1. Notify all fire department personnel of situation.
2. Notify news media of fire department plans.
3. Recall off-duty personnel according to standard operating procedures.
4. Evacuate all areas with water disaster potential.
4. Notify evacuees to shut off utilities before they leave.
6. Assist with evacuation of ambulatory patients.
7. Secure and evacuate all stations with water disaster potential.
8. Move all fire fighting equipment to strategic points with access to all parts of the area threatened.

Hurricane Strike Period

1. All fire department units report hazardous situations.
2. Watch for looters. Advise police of incidents.
3. Call for mutual aid if necessary.
4. Continue fire department operation where possible.
5. Utilize boats for rescue.
6. Monitor water supply resources (hydrant pressures).
7. If flood water is to be used for fire protection, it must be checked for contamination from flammable or combustible liquids.
8. Establish food service for fire department personnel.
9. Establish sanitation facilities for fire department personnel.
10. Establish sleeping facilities as required.

Recovery Period

1. Notify fire department personnel of situation.
2. Contain and extinguish all fires.
3. Assist in the clearing of roads. (Assign task force groups for tree-cutting as required. Clear main streets on a priority basis.)
   Example: Streets to hospitals should be cleared first.
4. Search for victims.
5. Reopen closed stations.
6. Assist returning evacuees.
7. Assist with temporary morgue operations as required.
8. Release mutual aid units.
9. Flush salt water from all vehicles. (corrosion control)
10. Release auxiliary and off-duty personnel.
11. Take inventory.
12. Report losses.
13. Criticize operations.

Chapter 4

Earthquake Checklist

Definition

An earthquake is a shaking or trembling of the crust of the earth caused by underground volcanic forces or the breaking and shifting of rock beneath the surface.

Background

Earthquakes are relatively unpredictable and strike without warning. They may range in intensity from slight tremors to great shocks and may last from a few seconds to as much as five minutes. They can occur in a series over a period of several days. The actual movement of the ground in an earthquake seldom is the direct cause of injury or death. Most casualties result from falling objects and debris because the shocks can shake, damage or demolish buildings and other structures.

Disruption of communications, along with light and power lines, gas, sewer or water mains can be expected. Earthquakes also may trigger landslides and generate huge ocean waves, each of which can cause great damage.

Pre-Earthquake Period

1. Participate in long-range planning as a priority rather than short-term response plans. Such long-range activities should include the study of fire engineering, building and fire codes.
2. Participate in adopting local laws designed to aid in long-range planning.
3. Conduct an analysis and develop response plans for
   (a) identifying groups of people most likely to need special assistance in the event of an earthquake,
   (b) high hazard areas such as hazardous materials storage facilities, gas pipelines.
4. Examine response patterns and emergency access roads to potential fire and rescue areas, evaluate the possibility of blocked streets and develop alternative routes.
5. Implement long-range planning for fire station design. Improve designs to prevent collapse of stations on fire apparatus. (The Managua, Nicaragua fire department lost 65% of its resources when stations collapsed on apparatus.)
6. Equip fire and rescue facilities with emergency generators. (Test generators monthly.)

Earthquake Period

1. Order fire apparatus out of fire stations.
2. Implement priority response in the following order:
   a. Fires, with trapped victims
   b. Fires, with probability of spread
   c. Trapped victims
   d. Large fires, no spread potential
   e. Medical aids, severe
   f. Major petroleum, gas leaks
   g. Small fires, no spread potential
   h. Medical aids, minor
   i. General assistance
3. Maintain strict security
4. Order a "conditions survey" of fire department property.
   a. Check integrity of buildings
   b. Check gas, electricity, water, sanitation
   c. Check emergency generator operation
   d. Test telephones
   e. Test apparatus radios
   f. Test station radios
   g. Test station sirens
5. General Areas Needing Attention
   a. Adequate personnel, equipment and support
   b. Survey critical areas
   c. Apparatus staging area
   d. Car pools/buses for personnel assignments
   e. Sleeping, food and housing for personnel
   f. Establish fueling areas
   g. Relief for personnel
   h. Sanitation
   i. Housing
   j. Food
   k. Field hospitals
   l. Fuel
   m. Maintenance
   n. Security
   o. Volunteers
6. Assign fire and rescue units to conduct damage survey of the following areas.
   a. Hospitals
   b. Schools — if occupied
   c. Theaters — if occupied
   d. Large manufacturing plants
   e. Economical, essential, industries
   f. Chemical plants
   g. Petroleum facilities
   h. Water system
   i. Major shopping centers
   j. Public assemblies — general
   k. Major apartment complexes
   l. Condition of roadways, etc.
   m. General condition of the city
7. Maintain close liaison with city/county emergency command and control.
8. Maintain watch for looters and report incidents to police.

Post-Earthquake Period

1. Prioritize station and apparatus repairs.
2. Schedule personnel shifts to permit personal repairs and reconstruction of their homes.
3. Establish secondary damage assessment program using

first due companies to inspect damage not surveyed in primary survey.

4. Establish follow-up fire safety inspection to correct existing deficiencies.
5. Develop a plan for implementing fire codes, fire engineering in newly-constructed or reconstructed buildings.
6. Develop inspection program for remodeling, renovation projects.
7. Criticize fire and rescue operations.

Chapter 5

Drought Disaster Checklist

Definition

A drought is a prolonged period of dryness which may pose extreme fire protection problems for both urban and rural fire departments. The following checklist provides suggested guidelines for developing a drought disaster plan.

Pre-Drought Period

1. Develop definitions of fire danger ratings, e.g., high, moderate, low. Check with forest service, weather bureau for local variations in terms.
2. Develop standard operating procedures for posting fire watches.
3. Check local fire ordinances for authority to ban open burning, cross-country motorcycle and off-road vehicle travel, open flame, camp fires, etc.
4. As the fire chief, have the authority and a system to implement immediate emergency ordinances for fire prevention.
5. Work out mutual aid agreement with water transport companies and vehicles.
6. Work out agreements with water department to determine minimum fire flow requirements during peak usage levels.
7. Prepare press releases, film clips, public information releases for news media on fire safety.
8. Inspect fire breaks for clearance.
9. Inspect access roads.
10. Inspect portable drafting tanks.
11. Train personnel on drafting operations.

Drought Period

1. Implement emergency ordinances banning open burning, off-road vehicle travel.
2. Implement fire patrols in high-risk areas.
3. Use strategic observation points
4. Implement public fire safety announcements.
5. Ban water use for unnecessary functions, e.g., watering lawns, washing automobiles, hydrants for recreation.
6. Increase fire apparatus response to high-risk areas. Respond with water tankers when necessary.

Chapter 6

Winter Storms/Blizzard Checklist

Pre-Storm Season Preparations

1. Organize snowmobile and ski emergency rescue and medical teams.
2. Contact the National Weather Service and establish definitions, especially "heavy snow warnings" and "cold wave warnings" that pertain to the area.
3. Provide local media with winter storm fire safety rules, winter automobile travel considerations, etc.
4. Reaffirm mutual aid agreements with other agencies such as ski patrols, Civil Air Patrol, amateur radio operators, four-wheel drive vehicle owners, farmers with tractors, contract snow removal.
5. Check telephone numbers and addresses of persons included in number 4 above.
6. Determine location and amounts of snow fencing, sand, salt, containers, snow shovels, and install and service as required.
7. Designate and place markers for plowing parking lots, driveways, fire hydrants, life occupancy dwellings.
8. Develop newspaper articles, press releases, video tapes for the media, on fire safety, heart attack, exposure, clearing hydrants, etc.
9. Inventory snow tires, chains, shovels, anti-freeze, oil and gasoline, and stock as necessary.
10. Review standard operating procedures for recall, placing chains on vehicle tires, tactics, etc. Update as required.
11. Check on hydrant maintenance.

Storm Warning Period

1. Check protective clothing: ear protection, gloves, socks, sweatshirts, face protection (ski masks), salves and ointments for frostbite. Maintain extra equipment.
2. Warn personnel about signs of frostbite and exposure.
3. Encourage plenty of rest, offer flu shots to avoid absenteeism.
4. Have personnel prepare their personal affairs, e.g., make sure family has heating oil, gas, food is stocked, automobiles are winterized.
5. Place sand, snow shovels, extra de-icing fluid (also in spray cans) on apparatus.
6. Drain pumps, booster lines (train on priming).
7. Check all marking lights on apparatus.
8. Add moisture evaporative to mixture in fuel tanks.
9. Scheduled training should include winter pumping, priming, cold weather first aid.
10. Arrange for extra food in the station.

Storm Period

1. Obtain only official information on highway and street closings and immediately pass information to the personnel.
2. Rotate personnel from emergency scenes to lessen fatigue, tension, flare-up of tempers.
3. Change work schedules to fit needs.
4. Stay abreast of weather forecasts.
5. Adopt double response patterns.
6. Obtain four-wheel drive vehicles as necessary. (Consider using farm vehicles).
7. Arrange for snow plow response to all scenes — furnish them with a portable radio.
8. Run an engine company with an ambulance.
9. Have off-duty personnel bring extra food, clothing for prolonged stay.
10. Staff stations with extra personnel.
11. Issue public assistance requests for clearing hydrants.
12. Place sleds/toboggans on apparatus for use with stokes liter.
13. Get police approval for use of snowmobiles on streets and sidewalks.
14. Be alert for excess snow accumulation and possible collapse of roofs, buildings. Caution citizens of hazards associated with clearing roofs.
15. Drive with headlights on at all times.
16. Check for drifts against exit doors.
17. Check for blocked fire lanes, plowed-over post indicator valves, standpipe connections.
18. Check tire pressures. (Tire pressure decreases with cold weather.)
19. Drain accumulated condensation from air brake system at beginning of cold weather and check periodically.

Thawing Period

1. Check portable pumps.
2. Develop pumping task forces.
3. Check boots for holes.
4. Train for flooding, water rescue, ice rescue.
5. Review flood disaster plan, standard operating procedures.

Chapter 7

Risk and Host Area Evacuation Checklist For Enemy Attack or Nuclear Incident

I. Introduction

This checklist has been prepared for fire and rescue services who may be engaged in mass evacuations because of enemy attack or nuclear incident. With some modification, this list may be used for mass evacuation of communities threatened by technological or natural hazards.

The user should consider this checklist as a basic tool for conducting mass evacuations rather than as a plan. Events appear in a logical sequence; however, they may be restructured to fit local needs and existing procedures.

II. Definition Of Terms For Risk And Host Area

Risk Area — A pre-determined area with potential, during nuclear confrontation, of receiving a nuclear strike. This area also includes the area surrounding the target because of the direct effects of nuclear explosion (radiation, heat, and wind).

Host Area — A pre-determined area with low potential, during nuclear confrontation, of receiving a nuclear strike. This area is out of possible direct nuclear effects of an on-target strike of the risk area, but is not without risk of fallout radiation.

Preparatory Period — From time of notification until time of evacuation.
Duty — Preparation for evacuation.

Relocation (Evacuation) Period — From time of initial evacuee movement until the evacuation is complete.
Duty — Assist in evacuation.

Maintenance Period — From time evacuation is completed until time of return of evacuees.
Duty — Maintain required service level.

Relocation (Return) Period — From time of return of evacuees until time return is complete.
Duty — Assist in return of evacuees.

Gear Down (Crisis Terminated) Period — From time of return of evacuees until notification crisis is terminated.
Duty — Resume normal operations.

Attack (Time Zero) Period — From time of notification or sighting of attack until notified attack is over.
Duty — Reduce or terminate operations, take shelter.

Preparatory Period Risk and Host Area Checklist

1. Retrieve, review and adopt relocation plans to be used.
2. In cooperation with the risk community and designated officials, determine the areas that risk the chance of direct nuclear effects.
3. Coordinate planning with potential risk areas for mutual aid operations.
4. Notify and advise fire department personnel of the situation.
5. Take inventory of all fire department resources.
6. Establish and maintain an up-to-date list of active and auxiliary personnel.
   Example: This list should include location of on and off-duty personnel and qualifications.
7. Maintain reserve fuel supplies at maximum.
8. Prepare for shortages of water, electricity and natural gas.
   Example: Preparation includes storage of bottled water, emergency generators, and portable heaters for the station.
9. Prepare for supplying food to fire department personnel in the case of continuous operations.
10. Obtain and train supplemental emergency operations center personnel.
11. Review requirements for fire prevention and control.
    Example: Develop new fire prevention policies, emergency ordinances and fire response procedures to fit the new needs during and after evacuation.
12. Prepare to support and assist evacuees.
13. Prepare for the handling of mass casualties.
14. Prepare for receiving and using risk area personnel and units.
15. Review fire department personnel requirements for in-place shelters.
16. Drill fire department personnel on nuclear hazards and protection procedures.
17. Prepare to notify evacuees, through media, of fire prevention and how to report an emergency.

Relocation (Evacuation) Period

1. Notify and advise fire department personnel of situation.
2. Assign extra personnel to emergency operations center.
3. Assign rescue and fire equipment to cover receiving areas of evacuees.
4. Assist law enforcement agency with traffic control as necessary.
5. Assist with reception of ambulatory evacuees.
6. Notify evacuees, through media, of fire prevention and how to report an emergency.
7. Use arriving risk area fire department evacuee equipment and manpower.
8. Institute new fire department prevention policies, emergency ordinances, and modify fire department response procedures.

Maintenance Period

1. Notify and advise fire department of situation.
2. Use any arriving risk area fire department evacuee manpower and equipment.
3. Continue modifying fire department prevention policies and response procedures.

4. Continue notifying evacuees of how to report an emergency.

Attack (Time Zero) Period

1. Notify personnel of time until attack.
2. All operations continue.
   Example: Host area is out of direct effects of nuclear strike, therefore, it should be affected only by fallout unless strike is off-target.
3. Emergency operations center notifies when attack is over.
4. All fire department units report damage.
5. Fire department units maintain operations where and when possible.
6. Notify personnel of fallout areas and contaminated areas where possible.
7. All fire department units check area for fallout and avoid contaminated areas, then report information to emergency operations center.
8. Emergency operations center recalls all personnel if possible.
9. Emergency operations center provides assistance on request to risk area.

Relocation (Return) Period

1. Notify and advise fire department personnel of situation.
2. Release supplemental risk area fire department equipment and manpower.
3. Continue modifications of fire department policies and response procedures.
4. Reassign fire and rescue equipment to cover staging areas of returning evacuees.
5. Assist law enforcement agency with traffic control as necessary.
6. Assist with the movement of ambulatory people.
7. Continue notification of evacuees of how to report an emergency.

Gear Down (Crisis Terminated) Period

1. Notify and advise fire department personnel of situation.
2. Resume normal operations.
3. Take inventory of fire department resources.
4. Assess losses or gains of resources in terms of numbers and costs.
5. Criticize the operation.

Risk Area Checklist

Preparatory Period

1. Retrieve, review and adapt relocation plan to be used.
2. In cooperation with the host area and designated officials, determine the areas that risk the chance of direct nuclear effects.
3. Coordinate planning with potential host areas for mutual aid operations.
4. Notify and advise fire department personnel of the situation.
5. Take inventory of all fire department resources.
6. Establish and maintain an up-to-date list of active and auxiliary personnel.
   Example: This list should include location of on and off-duty personnel and qualifications.
7. Develop a 12-hour work schedule to be implemented. (Twelve-hour shifts are the longest shifts advisable during an emergency of this magnitude.)
8. Maintain reserve fuel supplies at maximum.
9. Prepare for shortages of water, electricity and natural gas.
   Example: Preparation includes storage of bottled water, emergency generators and portable heaters for the station.
10. Prepare for supplying food to fire department personnel due to continuous operations or lack of open stores.
11. Arrange for repairs of equipment in the station or at local point.
12. Obtain and train supplemental emergency operations center personnel.
13. Prepare to put in service backup emergency operations center.
    Example: Back-up emergency operations center will take over all operations in the event the risk area emergency operations center cannot function. Back-up emergency operations center should be located at edge of risk area boundary.
14. Review requirements for fire prevention and control.
    Example: Develop new fire prevention policies, emergency ordinances and fire response procedures to fit the new needs during and after the time of evacuation.
15. Prepare to support and assist evacuees.
16. Prepare for handling of mass casualties.
17. Determine the equipment and personnel to move to host areas with evacuees to assist host areas.
18. Review fire department personnel requirements for in-place shelters and fringe of risk area shelters.
    Example: A nuclear strike on target in risk area will destroy a high percentage of fire department resources; therefore, to reduce losses fire department personnel and equipment should be evacuated to shelters on edge of risk area if time permits.
19. Drill fire department personnel on nuclear hazards and protection procedures.
20. Notify public, through media, of fire prevention tips for securing homes before evacuating.
    Example: Instruct public, through media, of how to shut off water, natural gas, and electrical appliances.

Relocation (Evacuation) Period

1. Notify and advise fire department personnel of situation.
2. Assign extra personnel to emergency operations center.
3. Assign rescue and fire equipment to cover staging areas for evacuation of area.
4. Assist law enforcement agency with traffic control as necessary.
5. Assist in evacuation of ambulatory residents.
6. Establish and maintain a fire safety patrol with the in-service fire department units and law enforcement units.
7. Assign fire department personnel to strategic viewing points in area for fire watches.
8. Institute procedure for handling transportation of sick and injured to host area hospitals.

9. Institute procedure for handling, transportation, and storage of bodies.

Maintenance Period

1. Notify and advise fire department of situation.
2. Reduce manpower to normal in man emergency operations center and transfer extra manpower to emergency operations center at edge of risk area.
3. Place back-up emergency operations center in service.
4. Release pre-determined units and personnel to assist host areas.
5. Establish 12-hour work shifts.
6. Continue modifying fire department prevention policies and fire department response procedures.
7. Assign fire department personnel to in-place shelter protection as well as shelter protection at fringe of risk area.
8. Arrange for regular garbage pickups for fire stations.
9. Arrange for feeding of fire department personnel.
10. Arrange for personal sanitation.

Attack (Time Zero) Period

1. Notify personnel of the time until attack.
2. All operations stop and personnel are evacuated from risk area.
3. Risk emergency operations center evacuates to back-up emergency operations center, if no time in place shelter is taken.
4. Fire department stations sound station warning devices if part of the Civil Defense network.
5. Fire department personnel evacuate with equipment to fringe of risk area shelter, if no time in place shelter is to be taken. Equipment in 2 psi (pounds per squre inch) or more overpressure area is to be left outside. It has been determined that if equipment is left in buildings with potential for exposure to nuclear blast pressure of 2 psi or greater, equipment is safer left outside.
6. Back-up emergency operations center notifies when attack is over.
7. All fire department personnel report equipment losses.
8. Back-up emergency operations center advises where possibility of radiation conditions exist.
9. All fire department units check areas for fallout and avoid contanimated areas, then report information to emergency operations center.
10. Back-up emergency operations center recalls all personnal if possible.
11. Resume fire department operations where and when possible.
12. Back-up emergency operations center can request assistance from host areas.

Relocation (Return) Period

1. Notify and advise fire department personnel of situation.
2. Release equipment personnel originally from risk area.
3. Reduce personnel in backup emergency operations center and transfer extra personnel to main emergency operations center.
4. Place back-up emergency operations center out of service.
5. Return to normal work shifts.
6. Continue modification of fire department policies and response procedures.
7. Reassign fire and rescue equipment to receiving areas of evacuees.
8. Assist law enforcement agency with traffic control as necessary.
9. Assist with reception of ambulatory people.

Gear Down (Crisis Terminated) Period

1. Notify and advise fire department personnel of situation.
2. Resume normal operations.
3. Take inventory of fire department resources.
4. Assess losses or gains of resources in terms of numbers and cost.
5. Criticize the operation.

Chapter 8

Hazardous Materials Disaster Checklist

Pre-Disaster Period

1. Conduct hazard analysis. Survey:
   a. Transportation modes
      1. Air
      2. Rail
      3. Water
      4. Pipeline
   b. Fixed facilities
      1. Factories
      2. Bulk storage
      3. Shipping and transfer
2. Conduct a survey of hazardous materials:
   a. Location
   b. Type
   c. Quantity
3. Evaluate resources available for dealing with specific locations and classes (*flammable gases, corrosives,* etc.) of hazardous materials.
4. Refer to transportation checklist for suggested surveys of transportation modes.
5. Determine deficiencies in individual department operating procedures.
6. Develop hazardous materials training program.
7. Develop standard operating procedures for hazardous materials incidents.
8. Establish mutual aid agreements with industries for:
   a. special fire protection
   b. suppression agents
   c. special container patch kits
   d. technical experts
   e. spill control and clean-up equipment personnel.
9. Develop pre-emergency response plans for potential transportation incidents and fixed facilities. Consider:
   a. *quantity of hazardous material involved*
   b. health problems
   c. fire danger
   d. reactivity with suppression agents
   e. potential dispersion areas
   f. life and property and environmental exposures
   g. control/shutoff valve locations
   h. special equipment required

Disaster Period

1. Determine the presence of hazardous materials. Consider:
   a. transportation vehicles
   b. dumps/waste sites
   c. construction areas
   d. fixed facilities
2. Estimate the potential harm to life, property and the environment. Consider:
   a. container size
   b. shape
   c. pressure
   d. quantity
3. Choose a response objective and consider options. Protect life exposure as necessary. Consider:
   a. Intervention for immediate life-threatening rescue, if required.
   b. Withdrawal from area for identification of material involved and further assessment.
   c. Total withdrawal and evacuation to an estimated safe area.
4. *Identify the material involved.*
   Look for:
   a. Use levels
      1) Industrial sites (higher concentration potential)
      2) Home use (weaker concentrations)
   b. Containers
      1) Sizes
      2) Shapes
      3) Configurations
   c. Container marking systems
      1) Special color codings
      2) Placards/labels (D.O.T., NFPA 704, United Nations Number)
      3) Stenciled tank identification numbers
      4) Company signs, product names
   d. Documents
      1) Waybill
      2) *Consist*
      3) Invoices
      4) Supply/Stock Inventory Lists
5. Contact manufacturer, shipper, etc., as required by contacting the Chemical Transportation Emergency Center (CHEMTREC 800-424-9300).
6. Re-evaluate emergency with new information.
7. Monitor progress throughout the incident.

Post-Disaster Period

1. Conduct medical evaluation of personnel as necessary.
2. Evaluate resources, inventory supplies, equipment damage.
3. Criticize emergency operations.
4. Review, revise, and update standard operating procedures, disaster plan mutual aid agreements as required.
5. Implement training program for correcting deficiencies.

Chapter 9

Transportation Disaster Checklist

Pre-Disaster Period

1. Conduct hazard analysis by surveying:
   a. Types of transportation in the jurisdiction
      1) Aircraft
      2) Boat/Ship
      3) Passenger Train
      4) Subway
      5) Bus
   b. Examine transportation routes
      1) Aircraft flight patterns
      2) Aircraft final approach patterns to local airports
      3) Train routes, track locations
      4) Bus travel routes; consider school buses and through traffic
      5) Shipping lanes, barge traffic, canals
   c. Check transportation accident records to determine most frequent accident areas. Consult police department records, Federal Railroad Administration, U.S. Coast Guard Port Commander, Federal Aviation Administration.
2. Establish areas most likely to have a transportation disaster.
3. Examine fire department resources available for responding to a potential transportation disaster. Consider:
   a. Triage, emergency medical supplies for mass casualty. Will there be enough to treat 100 to 500 passengers?
   b. Morgue capabilities, body markers, tags, bags
   c. Special extrication equipment
   d. Underwater rescue capabilities
   e. Breathing apparatus capable of subway rescue, e.g. 45 to 60 minutes
   f. Communications for long-term field operation
4. Develop special operations plans as necessary for individual disaster types. Stress command post operations, communications, triage, and mutual aid.

Disaster Period

Implement disaster plan and conduct normal fire and rescue functions and adapt as the situation requires.

1. Establish clearly marked command post.
2. Establish necessary communications links with support agencies.
3. Implement triage, emergency medical operations plan.
4. Establish well-controlled perimeter and restrict unauthorized entry.
5. Preserve evidence for National Transportation Safety Board, U.S. Coast Guard, Federal Aviation investigators.
6. Hold briefings for the media on a regular basis. Implement a plan for a one-time tour of the accident scene.
7. Establish staging areas for mutual aid companies, helicopters, etc.
8. Maintain good field records (see appendix 1.), keep track of expenses, overtime, belongings of survivors, body part locations, etc.
9. Implement a body recovery plan for fatalities. Consider:
   a. additional body bags
   b. markers for body location, personal identification, investigation, morgue location
   c. temporary morgues, e.g. refrigerated vehicles, closed areas
   d. insect spray at the accident site during summer months

Post-Disaster Operations

1. Evaluate supply levels and resupply as necessary.
2. Hold a debriefing for fire and rescue personnel. Make psychological counseling available for personnel.
3. Criticize operations and develop recommendations for improvement.

Chapter 10

Civil Disturbance Operations Checklist

The following important points should be considered in developing plans for civil disturbance operations.

Fire Problems

1. Police problems should be watched closely for possible development into fire problems.
2. Time interval between police and fire problems may be a matter of an hour or days.
3. Helicopters or small planes are effective in evaluating the dimensions and direction of the fire problem. Activate plans for their use.

Command Posts

1. Number required based on local fire problem(s).
2. Define probable command post areas in advance.
3. Site selection based on:
   a.. Ample parking space
   b. Wide roads for manuevering
   c. Accessibility
   d. Communications capabilities
   e. Living accommodations
   f. Cooking facilities
   g. Toilet facilities
   i. Command operations rooms
   j. Secure area
   k. Near trouble areas
   l. Fuel dispensing facilities
   m. Mechanical repair facilities

Communications

1. Prepare communications plan and determine where supplementary communications are available. Civil Defense may be helpful.
2. Obtain extra portable radio units. These are at a premium at such times.
3. Inform all personnel of any special signals to be employed to designate civil disturbance.
4. Keep one radio channel clear for operational command purposes. If supplementary channels are not available presently, start a program to obtain them.
5. Messages must be screened and those of extreme importance should be transmitted by telephone, not radio, for security reasons.
6. A system of hand signals should be used by department officers to direct fire fighters.

Personnel

Relief and Food

1. Plan for relief of crews on a regular basis to avoid personnel fatigue.
2. Do not overlook local authorities. They probably can be of great assistance.

Recall

1. Plan for speedy recall of off-duty personnel and a staffing schedule for splitting two-piece companies and activating reserve apparatus.
2. Plan for re-assignment of personnel in salvage companies, etc., that might be unnecessary during such times.

Protection

1. Identify protective measures and procedures for their implementation during times of tension.
2. Notify police to obtain armed guards for active units.
3. Order all personnel to wear full protective equipment, including face shields, if available.
4. Warn all personnel not to operate alone in the event of trouble; officers should pay particular attention to pump operators and fire fighters at hydrants.
5. Order all personnel and officers to wear same colored protective clothing and helmets when disorder signal is received. This includes chief officers.
6. Prepare an evacuation plan for stations in critical areas.
7. Assign an emergency medical technician or a fire fighter with good first-aid knowledge to each piece of apparatus.

Mutual Aid

1. Do not call mutual aid until after own personnel are recalled.
2. Advise all mutual aid companies that may be called of impending plans and their place in those plans.
   a.. Type of equipment which may be needed.
   b. Double staffing for units to provide for relief.
   c. Location for response to convoy directions.
3. Advise mutual aid companies where to assemble in convoys for later response to pre-determined assembly areas.

Operations

1. Set forth on-site operational activities to be implemented if a civil disturbance emergency occurs.
2. Provide written documentation of authorities and responsibilities for key participants in the plan.
3. Provide basic guidance for gathering intelligence and for activating communications necessary to make timely and effective decisions.
4. Provide maps and inventories necessary to make effective decisions and take effective action.
5. Identify priorities to be considered in local fire defense.
6. Fire service and law enforcement agencies must work together to solve the problems.
7. Frequent briefings must be held with federal, state, county, and local law enforcement agencies to keep

them aware of any possible conditions that might arise.

8. Coordinate all plans with local police, sheriff, and National Guard and jointly plan police protection for all task force units.
9. Plan a basic task force of two pumpers, one ladder, and one chief officer for operations. A third pumper may be substituted if ladder company shortage exists.
10. All task force companies immediately should remove axes, bars, nozzles, and other equipment from exterior of apparatus and place them in compartments or otherwise under cover.
11. All open cab apparatus should be protected immediately by means of shields previously prepared and in readiness.
12. Provide mutual aid and command arrangements necessary for effective fire defense.
13. Do not commit available forces until certain of need. Make certain armed guards are on hand.
14. Decide whether or not to respond to obvious false alarms.
15. Warn all officers not to respond with emergency lights or sirens where mobs are gathered.
16. Order fire station doors closed and maintain only a minimum of illumination.
17. Chief officers may have to move from one location to another because of the numbers of fires.
18. When an area is considered unsafe, fire alarms should not be answered in that area.
19. Units attacked upon responding to an alarm should leave at once.
20. Task forces should respond to and return from all calls as a group.
21. Use hit-and-run tactics.
    a. Task forces should attempt to knock down and black out fires as quickly as possible with heavy streams. Small fires should be attacked with preconnected lines to maintain mobility.
    b. Keep personnel together and operate as closely as possible to apparatus.
    c. Keep hose lines to minimum length.
    d. Use straight streams for best reach.
    e. Make maximum use of wagon pipes, turrets, etc. If mutual aid is required, make your call immediately.
    f. Do not overhaul or consider salvage.
    g. Never let personnel operate alone — at least two people always should be with the apparatus.
    h. When fire is blacked out, pick up and get out of the area as quickly as possible.
22. Establish policies for training personnel as necessary to cope with potential local fire threat.

Chapter 11

Conflagration Checklist

Pre-Disaster Period

1. Conduct hazard analysis.
   a. Identify potential conflagration areas
   b. Conduct conflagration analysis
   c. Evaluate fire suppression capabilities
   d. Evaluate water supplies, fire flow capabilities
2. Establish mutual aid agreements with:
   a. Fire departments for personnel and apparatus
   b. Railroads for flat car transportation of apparatus
   c. Water tankers such as tank trucks, cement mixers
   d. Demolition teams
3. Review laws, ordinances for the authority to demolish public property in emergencies.
4. Develop drafting areas at parks, streams, lakes, swimming pools.
5. Participate in long-range planning to eliminate conflagration hazards.
   a. Construct fire breaks
   b. Develop fire codes for preventing conflagration hazards.
6. Develop standard operating procedures for emergency response to conflagration.
7. Survey hose thread sizes and adapt as necessary.

Conflagration Potential Period

During periods of prolonged hot, dry weather with high winds.

1. Implement "no burning" laws.
2. Increase inspections in hazard areas.
3. Use fire patrols in hazard areas.
4. Increase response levels for reported fires in hazard areas.

Conflagration Period

1. Determine fire spread potential.
2. Call for additional resources as required immediately.
3. Contact water distribution facilities to increase water supply to affected area.
4. Evacuate areas well in advance of the fire.
5. Request additional communications equipment as required.
6. Use helicopters for observations.
7. Maintain entry and exit control points.
8. Use natural fire breaks for defense lines well in advance of the fire.

Post-Conflagration Period

1. Inventory resources and restock as necessary.
2. Criticize fire service operations.
3. Review, revise, and update disaster plan and standard operating procedures as required.
4. Participate in fire engineering and code review as required.

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APPENDICES

APPENDIX-1

DISASTER RESOURCE CHECKLIST

I. Telephone/Address Resource List
   A. Instructions
   B. Sample letter for obtaining public cooperation
   C. Sample form for firms participating in resource list
   D. Disaster resource checklist A - Z
   E. Sample telephone and resource list
   F. Disaster field secretary checklist

DISASTER CHECKLIST

The attached Disaster Checklist is a project of the International Association of Fire Chiefs' Emergency Preparedness Committee and is meant to serve as a guide for disaster planning. It is not a solution or total plan, but simply a tool for operational functions in time of need.

The Committee suggests that the list be recopied to fit individual purposes, eliminating those listings for which the planner might have no need. Then, it is recommended that the planner begin to obtain telephone numbers (addresses also would be desirable) of the listings believed to be essential or that possibly might be needed. The sample sheet is divided into columns which offer listings for the various persons or organizations which might be needed so that contact probably could be made at any time.

After preparing the pages (in some instances, more than one person or service can be listed on one page, see sample), place them in alphabetical order according to the master index and place a page number after the person or service to correspond with the page listing the numbers.

Please note that in several instances, a service or person might be listed twice (Tollroad-Freeway Authorities-Freeway-Tollroad Authorities) for convenience, but the page number would remain the same for both.

In our efforts, we might have overlooked a person or service unique to an individual operation. They should be added to the listing. (The IAFC would appreciate advice on these additions.)

Sample Letter for Obtaining Public Cooperation In Developing An Emergency Response Resource List

Dear

The (your department's name) is in the annual process of updating its Disaster Checklist of available equipment and services that might be needed in the event of a major emergency or disaster occurring within the Fire District. Your firm is listed as a resource center for this type of equipment and your assistance in updating our call list would be appreciated.

The attached form will be filed in our master guide when it is returned and is of the utmost importance to us. The telephone numbers and names will be held in confidence. We will call upon you only after hours for equipment and services in the event that a major situation requires the materials or services that you have.

We have listed the following equipment or services as being available from you:

A self-addressed, postage-paid envelope is enclosed for your use in returning the form to us and we thank you for your continued cooperation.

_____ _____

Fire Chief Project Coordinator

Enclosures

(SAMPLE)

TO: (Your department's name)
FROM: Name of our firm _____
Address _____
Today's Date _____

The telphone number(s) to call in the event of the need for our services or equipment at the time of a major situation or disaster arising within the (your department's fire jurisdiction) are as follows:

PRIMARY NUMBER _____
should be answered by _____
SECONDARY NUMBER _____
should be answered by _____
ADDITIONAL NUMBER _____
should be answered by _____
ADDITIONAL NUMBER _____
should be answered by _____

We have added the following equipment or services that might be of use to the fire department in the event of a major situation or disaster:

Additional Comments:

Form Completed by _____

Absorbents, Chemical — Circular Saws

DISASTER RESOURCE CHECKLIST

OFFICIAL OR SERVICE	*PAGE*
ABSORBENTS, CHEMICAL	
AIR NATIONAL GUARD	
AIRPORTS	
AMUBLANCES	
AMERICAN RED CROSS	
ANIMAL CONTROL	
APARTMENT COMPLEXES	
APPARATUS REPAIRS	
APPARATUS TIRES	
ARMY ORDINANCE	
ATTORNEY	
BARGE LINES	
BARRICADES	
BLOODHOUNDS-DOGS	
BOARD OF EDUCATION	
BOARD-UP SERVICE	
BOATS (Rescue, Evacuation)	
BOMBS (Bomb Threats, Bomb Handling)	
BOOM FLOATS (Oil Spills)	
BREATHING AIR	
BRIDGE AUTHORITY	
BUILDING COMMISSIONER	
BUILDING INSPECTOR	
BUILDING WRECKERS	
BULLDOZERS	
BUREAU OF STREETS & SANITATION	
BUSES	
BUSINESSES	
CARRYALL TYPE VEHICLES	
CATERERS/RESTAURANTS	
CAVE-IN UNIT	
CHAIN SAWS	
CHEMICAL INFORMATION	
CHEMICAL RESPONSE INFORMATION	
CHEMTREC	
CHLORINE PATCH KITS	
CHURCHES	
CIRCULAR SAWS	
CIVIL AIR PATROL	
CIVIL DEFENSE ORGANIZATIONS	
CITIZEN BAND RADIO CLUB	
CITY ENGINEER	
CITY MANAGER	
CLERGY	
COMPRESSED AIR	
COMMUNICATIONS CENTER	
COMMUNICATIONS CENTER-MOBILE	
CONSTRUCTION EQUIPMENT	
CORONERS OFFICE	
COUNCILMEN-TRUSTEES	
COUNTY OFFICIALS	
COUNTY POLICE	
CRANES	
CUSTOMS OFFICE	
CUTTING TORCHES	
DEMOLITION COMPANIES (BLDGS.)	

OFFICIAL OR SERVICE	*PAGE*
DEPARTMENT OF CONSERVATION	
DEPARTMENT OF TRANSPORTATION	
DIESEL FUEL	
DIKING MATERIALS	
DIVERS EQUIPMENT	
DOCTORS	
DOGS-BLOODHOUNDS	
ELECTRIC COMPANY	
ELECTRICAL ENGINEERS	
ELECTRICAL INSPECTORS	
ENVIRONMENTAL PROTECTION AGENCY	
EVACUATION OR ACCUMULATION CENTER	
EXPLOSIVE - (HANDLING, Precautions)	
F.A.A. (Federal Aviation Authority)	
F.B.I. (Federal Bureau of Investigation)	
F.C.C. (Federal Communications Commission)	
FALLOUT SHELTERS	
FIELD HOSPITALS	
FIRE COMMISSIONER	
FIRE DEPARTMENT (AREA)	
FIRE DEPARTMENT EQUIPMENT & SUPPLIES	
FIRE DEPARTMENT MEMBERS	
FIRE MARSHAL (Local, State)	
FIRE PROTECTION DISTRICT TRUSTEES	
FIRE PROTECTION ENGINEER	
FLOODLIGHTS	
FOOD	
FOUR-WHEEL DRIVE VEHICLES	
FREEWAY-TOLLWAY AUTHORITY	
FRONT LOADERS	
FUEL SUPPLIERS	
GASOLINE DELIVERY TRUCKS	
GAS COMPANY	
GENERATORS, ELECTRIC	
GRAVEL, SAND	
HAZARDOUS MATERIALS EXPERTS	
HAZARDOUS MATERIALS TEAM	
HAM RADIO ORGANIZATIONS	
HEALTH DEPARTMENT	
HEATERS, PORTABLE	
HEAVY EQUIPMENT	
HELICOPTERS	
HIGHWAY DEPARTMENTS (State, County, Township)	
HOSPITALS	
HURST TOOLS	
ICE	
IMMIGRATION & NATURALIZATION	
INDUSTRIES	
JAIL AUTHORITIES	
LAW ENFORCEMENT	
LIGHTING UNITS (Portable, generator)	
LUMBER COMPANY	
MASS TRANSPORTATION	
MARINE	
MARINE TUGS (no fire pumps)	
MARINE TUGS (with fire pumps)	
MAYOR OR PRESIDENT	
MINISTERS	
MORGUES	
MOUNTAIN RESCUE TEAMS	
NATIONAL GUARD	

OFFICIAL OR SERVICE	*PAGE*
NATIONAL RESPONSE CENTER (NRC)	
NATIONAL TRANSPORTATION SAFETY BOARD	
NEWSPAPERS	
NURSES ASSOCIATION	
QUARRIES	
PARK DISTRICT	
PHOTOGRAPHERS, AERIAL	
POLLUTION RESPONSE (NRC)	
PORT AUTHORITY	
PORTABLE ANTENNAS	
PORTABLE FIELD HOSPITAL	
PORTABLE TOILETS	
PORTABLE WATER (Tankers and pipelines) (Dairy tankers and Redi Mix Trucks)	
PORTABLE WATER (Drinkable)	
POST OFFICE	
POSTAL INSPECTOR	
PRESS	
PSYCHOLOGIST	
PUBLIC WORKS	
RADIO COMMUNICATIONS CENTER-MOBILE	
RADIO STATIONS	
RADIOACTIVE MATERIALS HANDLERS	
RAILROADS	
RAILROAD DISPATCHER	
RAILROAD DIVISION SUPERINTENDENT	
RAILROAD POLICE	
RAILROAD CRANE	
RAPID TRANSIT	
RED CROSS	
REFRIGERATED TRAILERS	
REGIONAL RESPONSE TEAM	
REPAIR SHOPS (Fire Dept.)	
RESTAURANTS/CATERERS	
SALVATION ARMY	
SAND BAGS	
SAND, GRAVEL	
SANITATION (BUR. OF STREETS)	
SANITARY DISTRICT	
SAWS (Chain, Circular, Gas, Electric)	
SAWDUST	
SCHOOLS	
SCUBA DIVERS	

OFFICIAL OR SERVICE	*PAGE*
SHOPPING CENTERS	
SHERIFFS OFFICE	
SNOWMOBILES	
SODA ASH	
STATE FIRE MARSHAL	
STATE POLICE	
STATION WAGONS	
STREET DEPARTMENT	
STRUCTURAL ENGINEERS	
SUBWAY AUTHORITY	
SUICIDE PREVENTION SERVICE	
SUPERINTENDENT OF SCHOOLS	
TELEVISION STATIONS	
TIRES FOR APPARATUS	
TRANSIT AUTHORITY	
TRAUMA COORDINATOR	
TREASURER	
TREASURY DEPARTMENT	
TRUSTEES-COUNCILMEN	
TOILETS (Portable)	
TOLLROAD-FREEWAY AUTHORITY	
TOW TRUCKS	
TOWNSHIP ROAD DEPARTMENT	
TOWNSHIP OFFICIALS	
U.S. AIR FORCE	
U.S. ARMY	
U.S. COAST GUARD	
U.S. DEPT. OF AGRICULTURE	
U.S. IMMIGRATION & NATURALIZATION	
U.S. MARINES	
U.S. NAVY	
U.S. NUCLEAR REGULATORY COMMISSION	
U.S. POST OFFICE	
U.S. TREASURY DEPARTMENT BUREAU OF EXPLOSIVES	
VACUUM TANKS (Spills)	
VETERINARIAN	
VILLAGE MANAGER	
WASTE DISPOSAL, CHEMICAL	
WATER DEPARTMENT	
WEATHER BUREAU	
WELDING EQUIPMENT	
WOOD SHAVINGS	
WRECKING COMPANIES	
ZOO (Wild animal control)	

Area on Disaster Checklist

SAMPLE TELEPHONE LIST

Barricades	***Business Hours***	***Other***
SMITHTOWN STREET DEPARTMENT	688-9000 E56	667-9856
LESLIE TOWNSHIP ROAD DEPARTMENT	787-8000 E10	667-9943
LEE COUNTY HIGHWAY DEPARTMENT	668-9100 E167	643-9012
NEVADA STATE HIGHWAY DEPARTMENT	543-1000 E13	674-9087
		674-4432
		542-0090
BARRICADES OF NEVADA	667-8700	667-9866
		667-0966
		643-1200

Barricades	*Business Hours*	*Other*
ATLAS CONSTRUCTION COMPANY	668-0010	321-0087 667-6666 667-6900
SMITHTOWN PARK DISTRICT (ONLY 15 AVAILABLE)	667-7000	667-4321 667-4562
Board of Education		
SMITHTOWN PUBLIC SCOOLS	667-5000	667-3244 667-4355 667-5546
SMITHTOWN PAROCHIAL SCHOOLS	667-3000	667-6544 667-7685
CHIEF CUSTODIAN (PUBLIC SCHOOLS)	667-5000 E57	667-7854
CHIEF CUSTODIAN (PAROCHIAL SCHOOLS)	667-3000 E17	667-6655

Note: Page Numbers Correspond to Page 5 of Sample Telephone List

SAMPLE (COMPLETED) DISASTER RESOURCE CHECKLIST

OFFICIAL OR SERVICE	*PAGE*
AIR NATIONAL GUARD	
AIRPORTS	
AMBULANCES	
AMERICAN RED CROSS	
APARTMENT COMPLEXES	
APPARATUS REPAIRS	
APPARATUS TIRES	
ARMY ORDINANCE	
ATTORNEY	
BARGE LINES	
BARRICADES	
BLOODHOUNDS-DOGS	
BOARD OF EDUCATION	
BOARD-UP SERVICE	
BOATS (Rescue, Evacuation)	
BOMBS (Bomb Threats, Bomb Handling)	
CHAIN SAWS	
CHEMICAL INFORMATION	
CHEMICAL RESPONSE INFORMATION	
CHEMTREC	
CHURCHES	
CIRCULAR SAWS	
CIVIL AIR PATROL	
CIVIL DEFENSE ORGANIZATIONS	
CITIZEN BAND RADIO CLUB	
CITY ENGINEER	
CITY MANAGER	
CLERGY	
CLERK	
COMPRESSED AIR	
COMMUNICATIONS CENTER	
COMMUNICATIONS CENTER-MOBILE	
CONSTRUCTION EQUIPMENT	
DIVERS EQUIPMENT	

OFFICIAL OR SERVICE	*PAGE*
DOCTORS	
DOGS-BLOODHOUNDS	
ELECTRIC COMPANY	
ELECTRICAL ENGINEERS	
ELECTRICAL INSPECTORS	
ENVIRONMENTAL PROTECTION AGENCY	
EVACUATION OR ACCUMULATION CENTERS	
EXPLOSIVES (Handling Precautions)	
F.A.A. (Federal Aviation Authority)	
F.B.I. (Federal Bureau of Investigation)	
F.C.C. (Federal Communications Commission)	
FALLOUT SHELTERS	
FIELD HOSPITAL	
FIRE COMMISSIONER	
FRONT LOADERS	
FUEL SUPPLIERS	
GAS COMPANY	
GRAVEL, SAND	
HAM RADIO ORGANIZATIONS	
HEALTH DEPARTMENT	
HEAVY EQUIPMENT	
HELICOPTERS	
HIGHWAY DEPARTMENTS (State, County, Township)	
HOSPITALS	
HURST TOOLS	
ICE	
IMMIGRATION & NATURALIZATION	
INDUSTRIES	
JAIL AUTHORITIES	
LAW ENFORCEMENT	
LIGHTING UNITS (Portable, Generators)	

DISASTER FIELD SECRETARY CHECKLIST

Operating a Field Command Post during disasters requires extensive preplanning, cooperation and coordination. Normal record keeping, communications and general administrative duties will require an adequate supply of administrative instruments. Fire Chiefs with disaster experience have developed the following list for a self-contained "Field Secretary". (These items are carried in containers appropriately marked. They are intended for use upon request at scenes of disaster operations, major fires, and police situations. They are not intended for day-to-day use but should be inventoried and items that could become unusable should be rotated frequently. All losses or shortages should be reported to the Chief of the Department immediately.)

This equipment is intended to be used by any department during an emergency:

- 2 Clip Boards (8½ × 11)
- 100 Cardboard tags (tie on type)
- 1 book Money Receipts
- 1 roll masking tape (¾" × 60 yds)
- 3 felt tip markers (red, black, blue)
- 1 box crayola crayons (16)
- 2 legal size pads (8 × 13)
- 50 thumb tacks
- 2 pkgs. rubberbands (assor. sizes)
- 12 (6 × 8) "No Smoking" signs (F.D.)
- 1 pkg. freezer bags (12 × 6 × 24)
- 5 (9 × 12) large manila envelopes
- 20 (12 × 15) brown envel. (manila)
- 12 (6 × 8) "KEEP OUT" signs (F.D.)
- Binoculars
- 100 Medical Triage Tags (minimum)
- 1 roll heavy twine
- 2 large scratch pads
- 1 box white chalk
- 1 pair scissors
- 50 (8 × 10) brown envelopes
- 1 stapler, extra staples (small)
- 1 box paper clips
- 1 pad white squared paper (8 × 13)
- 3 spring clips
- 1 pkg. freezer bags (8 × 3 × 15)
- 1 pkg. assor. pencil-pens
- 5 (10 × 13) large manila envelopes
- 1 area telephone directory
- 1 telephone directory, yellow pages
- 1 box single-edge razor blades
- 6 pieces plumbers chalk

APPENDIX - 2

Voluntary Organizations Active In Disaster Services

GUIDELINES FOR DEVELOPING RED CROSS AND VOLUNTEER ORGANIZATION DISASTER RESPONSE PLANS

The basic steps involved in working with the Red Cross and other voluntary groups are simple:

1. A written agreement and plan should be worked out which outlines Red Cross and fire department responsibilities and how they complement each other.

2. A system should be developed for notifying the nearest Red Cross chapter when families are in need of help or the fire department needs canteen or other assistance. Where feasible, this could be done through a municipal or county fire dispatch system. Red Cross chapters frequently are located in the county seat; therefore, it may be desirable for the notification system to include names and phone numbers of Red Cross contact or liaison people who live within each fire department's jurisdiction. Perhaps the best way to initiate such arrangements, if they do not exist already, is through the county emergency service organizations.

3. A person in each department should be designated as an operational liaison to the Red Cross and other voluntary agencies. This could be a designated officer, a fire fighter who is a Red Cross-certified first-aid instructor, and thus, already a Red Cross volunteer or an officer of the auxiliary.

4. If there are specific arrangements made for utilization of fire houses or other department facilities by the Red Cross, the basis on which they are used and who assumes certain costs should be spelled out in writing. Whenever fire department facilities are used or the Red Cross and other voluntary groups work with the fire department or its auxiliary, the cooperative nature of the relief effort should be clearly identified so everyone is aware of it.

5. In planning for larger disasters, arrangements between the fire department and the Red Cross or other groups should be a part of the total community or county plan.

VOLUNTARY ORGANIZATIONS ACTIVE IN DISASTER

November 1979 Roster Update

AMERICAN NATIONAL RED CROSS
Robert D. Vessey
National Director
Disaster Services
Washington, D.C. 20006
(202) 857-3722

ANANDA MARGA
Ms. Kay Nelson
8700 Manchester Road #3
Silver Spring, Maryland 20901
(301) 588-6395

BOY SCOUTS OF AMERICA
James C. Langridge
P.O. Box 61030
Dallas/Ft. Worth Airport, Texas 75261
(214) 659-2447

B'NAI B'RITH NATIONAL HEADQUARTERS
Seymour C. Cohen
Disaster Relief Commission
1640 Rhode Island Avenue, N.W.
Washington, D.C. 20036
(202) 857-6600

CHURCH OF THE BRETHREN DISASTER SERVICE
H. McKinley Coffman
Brethren Service Center
Box 188
New Windsor, Maryland 21776
(301) 635-6464 ext 45

AMERICAN NATIONAL RED CROSS
Kathy Curry
Deputy Director
Disaster Services
Washington, D.C. 20006
(202) 857-3718

ANANDA MARGA
Universal Relief Team
854 Pearl Street
Denver, Colorado 80203
(303) 623-6602

B'NAI B'RITH NATIONAL HEADQUARTERS
Amy E. Lynn
Community Projects Coordinator
1640 Rhode Island Avenue, N.W.
Washington, D.C. 20036
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CHURCH OF THE BRETHREN DISASTER SERVICE
R. Jan Thompson
Brethren Service Center
Box 188
New Windsor, Maryland 21776
(301) 635-6464 ext 45

CHRISTIAN REFORMED WORLD RELIEF COMMITTEE
C. Neil Molenaar
Director, Domestic Programs
2850 Kalamazoo Avenue, S.E.
Grand Rapids, Michigan 49508
(616) 241-1696

CHURCH WORLD SERVICE
John Schauer
Director Material Resources
475 Riverside Drive, Room 630
New York, New York 10027
(212) 870-2066

THE EPISCOPAL CHURCH CENTER
Rev. Samir J. Habiby
Executive Director
Presiding Bishops Fund for W.R.
815 Second Avenue
New York, New York 10017
(212) 867-8400

GOODWILL INDUSTRIES OF AMERICA
Joseph E. Pouliott
Executive Vice President
9200 Wisconsin Avenue, N.W.
Washington, D.C. 20014
(301) 530-6500

LUTHERAN COUNCIL IN THE U.S.A.
Rev. Richard Rhyne
Domestic Disaster Response
360 Park Avenue, South
New York, New York 10010
(212) 532-6350 office in NYC
(919) 275-4636 home office

MENNONITE DISASTER SERVICE
C. Nelson Hostetter
21 South 12th Street
Akron, Pennsylvania 17501
(717) 859-1151 or 2392

NATIONAL CATHOLIC DISASTER RELIEF COMMITTEE
Rev. Msgr. Leo J. Coady, Chairman
Holy Redeemer Rectory
9705 Summit Avenue
Kensington, Maryland 20795
(301) 942-2333

CHURCH WORLD SERVICE
W. D. Dibrell
Domestic Disaster Coordinator
Box 188
New Windsor, Maryland 21776
(301) 635-6464 ext 25

THE EPISCOPAL CHURCH CENTER
Miss Marion Morey
Assistant Director
Presiding Bishops Fund for W.R.
815 Second Avenue
New York, New York 10017
(212) 867-8400

NATIONAL CONF OF CATHOLIC CHARITIES
Brother Joseph Berg
Suite 307
1346 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 785-2757

PRESBYTERIAN CHURCH IN U.S.
Colleen Shannon-Thornberry
Staff Assoc. National Services
General Assembly Mission Board
341 Ponce De Leon Avenue
Atlanta, Georgia 30308
(404) 873-1531

THE SALVATION ARMY NATIONAL HDQ
Col. Orval A. Taylor
National Chief Secretary
120 West 14th Street
New York, New York 10011
(212) 620-4900

SEVENTH-DAY ADVENTISTS GENERAL CONFERENCE
Perry F. Pedersen
6840 Eastern Avenue
Washington, D.C. 20012
(202) 723-0800

SOUTHERN BAPTIST CONVENTION HOME MISSION BOARD
Dr. Paul R. Adkins, Director
Dept. of Christian Social Min.
1350 Spring Street, N.W.
Atlanta, Georgia 30309
(404) 873-4041

SOCIETY OF ST. VINCENT DE PAUL
Dudley Baker
Executive Secretary
Superior Council of the U.S.
4140 Lindell Blvd.
St. Louis, Missouri 63108
(314) 371-4980

THE SALVATION ARMY
Lt. Col. Ernest A. Miller
Director of World Service Office
1025 - 15th Street, N.W. - 2nd floor
Washington, D.C. 20005
(202) 833-5577

SEVENTH-DAY ADVENTISTS WORLD SERVICE
Robert Johnson
Potomac Conference
Box 1208, Gaymont Place
Staunton, Virginia 24401
(703) 886-0771 or 737-3793

SOUTHERN BAPTIST CONVENTION
Norman Godfrey
Director of Ministries
Brotherhood Commission
1548 Poplar Avenue
Memphis, Tennessee 38104
(901) 272-2461

SOCIETY OF ST. VINCENT DE PAUL
Col. Arthur S. Lawless
Council of the United States
715 Wilmington Jan. to
Dayton, Ohio 45420 mid May
(513) 299-3159
110 Riverside Drive
Saranac Lake, New York 12983
(518) 891-4701
Mid May to January

UNITED METHODIST CHURCH COMMITTEE ON RELIEF (UMCOR)
Paul T. Morton
Exec. Sec. for Special Min.
Board of Global Ministries
475 Riverside Drive, Room 1470
New York, New York 10027
(212) 678-6239 or 6290

UNITED PRESBYTERIAN CHURCH U.S.A.
William K. DuVal
World Relief, Emergency and Resettlement Service
475 Riverside Drive, Room 1268
New York, New York 10027

VOLUNTEERS OF AMERICA
General John F. McMahon
Commander-In-Chief
340 West 85th Street
New York, New York 10024
(212) 873-2600

VOLUNTEERS OF AMERICA
Lt. Col. Robert N. Coles
P.O. Box 398
Hagerstown, Maryland 21740
(301) 739-4431

VOLUNTEERS OF AMERICA
Col. Ray C. Tremont
Southern Regional Director
433 Metairie Road
Metairie, Louisiana 70005
(504) 837-2652

APPENDIX - 3

Disaster Planning Evaluation Exercises

HAZARD IDENTIFICATION TRAINING EXERCISE

Possible hazards that may exist in a fire department's jurisdiction are listed below. Bear in mind that more than one hazard may exist in one location and some hazards may be dependent on other hazards. As an example, bulk storage tanks of gasoline or propane gas may be located adjacent to a railroad. Locations and numbers of highways, railroad sidings and switching yards, cross-overs and switches, etc., will increase the hazard of some locations. Other factors to consider are density of population, the types of nearby structures, access to the area, drainage systems, etc. In other words, *what is the potential of a hazard becoming a disaster*?

Rely on the judgement of the planner and use numbers 0 to 3 to indicate in the right column, the likelihood of each of these hazards developing into a disaster in the individual District. Use the rating as follows: (0 = none; 1 = remote probability; 2 = probable; 3 = highly probable).

I. NATURAL AND ENVIRONMENTAL
- A. Earthquakes ..... _____
- B. Floods ..... _____
- C. Tornados ..... _____
- D. Very Heavy Snowstorms ..... _____
- E. Ice Storms ..... _____
- F. Landslides ..... _____
- G. Forest or Brush Fires ..... _____
- H. Land Cave-ins ..... _____
- I. Droughts ..... _____
- J. Severe Wind Storms ..... _____

II. MEDICAL
- A. Extreme Smog/Air Pollution ..... _____
- B. Epidemic ..... _____
- C. Water Pollution ..... _____
- D. Mass Poisoning ..... _____
- E. Rodents ..... _____
- F. Other ..... _____

III. INDUSTRY
- A. Fuel
  - 1. Gasoline Bulk Storage Tanks .. _____
  - 2. Propane Bulk Storage Tanks ..... _____
  - 3. Underground Gas Storage .... _____
  - 4. Underground Gas Mains ..... _____
  - 5. Pipe Lines (gas, crude oil) .... _____
  - 6. Other _____ ..... _____
- B. Hazardous Manufacturing Plants and/or Storage
  - 1. Fireworks/Explosives ..... _____
  - 2. Oxygen and Acetylene ..... _____
  - 3. Poisonous Chemicals ..... _____
  - 4. Compressed Gases ..... _____
  - 5. Other ..... _____

IV. TRANSPORTATION (DANGEROUS CARGO)
- A. Railroads ..... _____
- B. Highways ..... _____
- C. Airports or Flyways ..... _____
- D. Freight Terminals ..... _____
- E. River Barges ..... _____
- F. Other _____ ..... _____

V. RADIATION
- A. Nuclear Power Plants (within 50 miles) ..... _____
- B. Radioactive Waste Disposal Site Nearby ..... _____
- C. Nuclear Fuel Recovery Plant Nearby ..... _____
- D. Nuclear Fuel Processing Plants ... _____
- E. Nuclear Research ..... _____
- F. Strategic Weapons (missile station or storage) ..... _____
- G. Commercial Users (oil driller, hospital, etc.) ..... _____
- H. Other _____ ..... _____

VI. DOMESTIC
- A. Power Failure ..... _____
- B. Water Shortage ..... _____
- C. Fuel Shortage .....
- D. Food Shortage .....
- E. Civil Disturbance .....
- F. Subversive Activities .....
- G. Large Fires .....
- H. Other _____ .....

VII. MISCELLANEOUS
- A. Drownings ..... _____
- B. Structural Collapse .....
- C. Other _____ .....

THIS FORM PREPARED BY THE ILLINOIS EMERGENCY PREPAREDNESS AGENCY

EVALUATION EXERCISE FOR RESPONSE DEMANDS

	What is the demand?	How is the demand to be met?	Who will assume responsibility for the demand?
Communications			
Continuing Assessment			
Mobilization			
Coordination			
Control & Authority			

Instructions

Use the above exercise for evaluating response demands for a disaster requiring fire department services. Review the responses and compare the expectations with the proposed disaster plan, existing plan, and expectations of fellow fire officers.

THIS FORM PREPARED BY THE ILLINOIS EMERGENCY PREPAREDNESS AGENCY.

DISASTER DEMANDS EVALUATION EXERCISE

	What is the demand?	Who will assume responsibility for the demand?	How is the demand to be met?
Warning			
Pre-Impact Preparations			
Search & Rescue			
Care of Injured & Dead			
Welfare			
Restoration of Community Services			
Protection Against Continued Threat			
Community Order			

Instructions

Examine each phase of a disaster and consider the levels of demand for each phase. Compare the response to the proposed, existing, or revised disaster plan. Evaluate response to identify differences in expectations.

THIS FORM PREPARED BY THE ILLINOIS EMERGENCY PREPAREDNESS AGENCY.

APPENDIX-4

A Summary Of Responses To The IAFC/FEMA Disaster Planning Survey

Background

The International Association of Fire Chiefs (IAFC), under contract from the Federal Emergency Management Agency (FEMA) conducted a survey of fire chiefs to collect data relevant to the identification and extent of involvement, cooperation, and success between fire chiefs and emergency preparedness directors in the development and operation of disaster contingency plans.

Survey Questions

Survey questions were designed to obtain information in two major areas:

- The fire chiefs' perception of disaster planning problems in the community; and
- The level and extent of fire department disaster planning.

Questions were developed for objective and subjective responses. Most questions could be answered simply by checking an appropriate block.

Where additional response was desired, areas were provided for brief comment. Individual comments were reviewed and catalogued by problem type.

Questions on the survey came from two sources. One sequence was taken from a 1974 report, by the IAFC Civil Defense Committee titled, "Report on a Survey to Identify the Interests of the Fire Service in Civil Defense." These questions were selected to make a five-year comparison of the fire service/disaster preparedness (civil defense) interface. Additional questions were developed, by the IAFC project staff, to obtain information on plans development, problem recognition, and disaster training.

Interpreting This Summary

The quality of the survey response is attributable largely to IAFC efforts to ensure a questionnaire of high quality and clarity. All survey questions were reviewed for content by human factors specialists, independent testing specialists and fire protection personnel.

A *Statistical Package for the Social Sciences* (SPSS) program was used for the analysis of all survey data excluding the written responses. To summarize and display all data collected within the scope of the survey would be impossible in this limited summary. Therefore, for simplicity, much information has not been included. For example, in order to establish correlation of population size to disaster planning activity, the project team used the Pearson's Product-Moment Correlation Coefficient. Similar information has been prepared by the IAFC in a more detailed report.

The reader is cautioned not to draw conclusions beyond the intent of the survey. Several cautions are as follows:

1. Responses regarding the chief's opinion of problems reflect only the individual respondents' perception of the problem. While the chiefs' opinion may be the fire departments' official position, it does not necessarily reflect individual opinions of the department members nor does it reflect the local civil defense director/coordinator perception of the problems.
2. Although 714 responses were received from the original 2,692 surveys distributed, not all questions were answered. The reader is cautioned to examine the total number of responses received per question rather than the total number of responses received.

Reading the Summary

Statistics for individual questions are arranged to give two types of information. First, the total response and, second, the percentage that response represents. For example, question 16 asked "Is the position of emergency preparedness director full-time?" The total number of responses received for question 16 is 702. The number of YES responses totaled 231, 32.9% of the 702 individuals responding.

Question sequences in the summary reflect the order in which they appeared on the survey. Questions 1-6 were for identification purposes only.

Response Distribution

State	Total Responses	Percent of Total Responses
Alaska	5	0.7
Alabama	7	1.0
Arkansas	3	0.4
Arizona	10	1.4
California	81	11.3
Colorado	10	1.4
Connecticut	19	2.7
District of Columbia	1	0.1
Florida	31	4.3
Georgia	7	1.0
Hawaii	2	0.3
Idaho	8	1.1
Iowa	5	0.7
Illinois	58	8.1
Indiana	13	1.8
Kansas	14	2.0
Kentucky	5	0.7
Louisiana	10	1.4
Massachusetts	51	7.1
Maryland	12	1.7
Maine	9	1.3
Michigan	26	3.6
Minnesota	18	2.5
Missouri	17	2.4
Mississippi	3	0.4
Montana	5	0.7

State	Total Responses	Percent of Total Responses
North Carolina	16	2.2
North Dakota	4	0.6
Nebraska	5	0.7
New Hampshire	7	1.0
New Jersey	24	3.4
New Mexico	6	0.8
Nevada	5	0.7
New York	21	2.9
Ohio	54	7.6
Oklahoma	6	0.8
Oregon	16	2.2
Pennsylvania	28	3.9
Rhode Island	6	0.8
South Carolina	10	1.4
Tennessee	8	1.1
Texas	23	3.2
Utah	7	1.0
Virginia	10	1.4
Washington	5	0.7
Wisconsin	19	2.7
West Virginia	1	0.1
Wyoming	3	0.4

Population	Total Responses	Percent of Total Responses
0 - 9,999	97	13.6
10,000 - 24,999	216	30.3
25,000 - 49,999	191	26.8
50,000 - 99,999	101	14.1
100,000 - 249,999	53	7.4
250,000 - 499,999	26	3.6
500,000 - 999,999	26	3.6
1 million plus	4	0.6

	Total Responses	Percent of Total Responses
FULLY PAID DEPARTMENT	358	50.1
MOSTLY PAID DEPARTMENT	140	19.6
MOSTLY VOLUNTEER DEPARTMENT	118	16.5
FULLY VOLUNTEER DEPARTMENT	98	13.7

RESPONSE SUMMARY

NOTE: Question sequence reflects the order in which questions appeared on survey.

(7) Number of active personnel available for response to emergency incidents (includes paid, volunteers, and reserves): 103,562.

(8) Number of emergency medical personnel (EMT, paramedic, other MES): 31,638.

(9) Number of engine companies (one NFPA Class A or B pumper, two-piece engine companies should be counted as two pumpers): 7,696.

(10) Number of truck companies: 1,847.

(11) Number of rescue companies (light and heavy): 928.

(12) Number of fire department emergency medical/ambulance units: 1,379.

(15) Are you an emergency preparedness director (or coordinator, or civil defense director, or similar title), i.e., the person who is primarily responsible to coordinate and lead in developing civil preparedness?
Total # of responses: 708

Number of YES responses:	201	Percentage of YES responses:	28.4
Number of NO responses:	507	Percentage of NO responses:	7.16

(16) Is the position of emergency preparedness director full-time?
Total # responses: 702

Number of YES responses:	231	Percentage of YES responses:	32.9
Number of NO responses:	471	Percentage of NO responses:	67.1

(17) If the emergency preparedness director is a part-time job, what is the person's full-time occupation? Please respond by checking one of the following:
Total # of responses: 456

1. Fire and rescue services - 150 responses, 32.9% of total responses.
2. Mayor, city/county manager, staff - 76 responses, 16.7% of total responses.
3. Law enforcement, police, sheriff - 39 responses, 8.6% of total responses.
4. Retiree - 37 responses, 8.1% of total responses.
5. Real estate or other sales - 7 responses, 1.5% of total responses.
6. Public works or utilities - 22 responses, 4.8% of total responses.
7. Skilled trades (electrician, mechanic) - 16 responses, 3.5% of total responses.
8. Business persons - 43 responses, 9.4% of total responses.

9 Other - 66 responses, 14.5% of total responses.

(18) If the emergency preparedness director is employed by the fire department, check the individual's rank:
Total # of responses: 174

1. Chief officer (chief, deputy assistant, district, battalion) - 147 responses, 84.5% of total responses.
2. Operations officer (captain, lieutenant, sergeant) - 9 responses, 5.2% of total responses.
3. Fire fighter - 5 responses, 2.9% of total responses.
4. Civilian - 13 responses, 7.5% of total responses.

(19) How would you rate your fire department's relationship with the emergency preparedness director?
Total # responses: 688

1. Very good - 459 responses, 66.7% of total responses.
2. Good - 191 responses, 27.8% of total responses.
3. Poor 38 responses, 5.5% of total responses.

*(20) How would you describe the role of your local civil defense?
Total # of responses (In planning): 680

1. Directs - 121 responses, 17.8% of total responses.
2. Coordinates - 418 responses, 61.5% of total responses.
3. Liaison between other agencies - 276 responses, 40.6% of total responses.

*Percent total will not equal 100% since more than one response may be checked.

4. Other - 65 responses, 9.6% of total responses.

Total # of responses (In practice): 482

1. Direct - 106 responses, 22.0% of total response.
2. Coordinates - 248 responses, 51.5% of total response.
3. Liaison between other agencies - 187 responses, 38.8% of total response.
4. Other - 57 responses, 11.8% of total response.

(21) Does your fire department conduct meetings at least once a year with the local emergency preparedness director?

Total # of responses: 704

Number of YES responses:	477	Percentage of YES responses:	67.8
Number of NO responses:	227	Percentage of NO responses:	32.2

(22) Do you feel the emergency preparedness director has a basic understanding of fire and rescue service problems as they relate to disaster planning?

Total # of responses: 692

Number of YES responses:	560	Percentage of YES responses:	80.9
Number of NO responses:	132	Percentage of NO responses:	19.1

(23) As the chief for your jurisdiction, how would you rank the need for a local government emergency/disaster plan for:

A) International crisis or enemy attack:

Total # of responses: 706

1. High priority - 220 responses, 31.2% of total response.
2. Moderate priority - 283 responses, 40.1% of total response.
3. Low priority - 203 responses, 28.8% of total response.

B) Peacetime disasters:

Total # of responses: 701

1. High priority - 529 responses, 75.5% of total response.
2 Moderate priority - 151 responses, 21.5% of total response.
3 Low priority - 21 responses, 3.0% of total response.

(24) Does your fire department currently maintain a written disaster plan for:

A) International crisis or enemy attack:

Total # of responses: 695

Number of YES responses:	309	Percentage of YES responses:	44.5
Number of NO responses:	386	Percentage of NO responses:	55.5

B) Peacetime disaster:

Total # of responses: 698

Number of YES responses:	562	Percentage of YES responses:	80.5
Number of NO responses:	136	Percentage of NO responses:	19.5

(25) Was the fire department plan developed solely by fire department personnel?

Total # of responses: 623

Number of YES responses:	213	Percentage of YES responses:	34.2
Number of NO responses:	410	Percentage of NO responses:	65.8

(26) If agencies other than the fire department participate in the development of your plan, identify the participating agencies.

1. Total # of responses to Emergency preparedness/civil defense: 341

Number of YES responses:	263	Percentage of YES responses:	77.1
Number of NO responses:	78	Percentage of NO responses:	22.9

2. Total # of responses to Local Police: 306

Number of YES responses:	240	Percentage of YES responses:	78.4
Number of NO responses:	66	Percentage of NO responses:	21.6

3. Total # of responses to State Police: 92

Number of YES responses:	76	Percentage of YES responses:	82.6
Number of NO responses:	16	Percentage of NO responses:	17.4

4. Total # of responses to Emergency Medical Services (ambulance, rescue): 232

Number of YES responses:	176	Percentage of YES responses:	75.9
Number of NO responses:	56	Percentage of NO responses:	24.1

5. Total # of responses to National Guard: 73

Number of YES responses:	60	Percentage of YES responses:	82.2
Number of NO responses:	13	Percentage of NO responses:	17.8

6. Total # of responses to Public Utilities (gas, electric, telephone): 146

Number of YES responses:	120	Percentage of YES responses:	82.2
Number of NO responses:	26	Percentage of NO responses:	17.8

7. Total # of responses to City/county manager, mayor's office: 234

Number of YES responses:	186	Percentage of YES responses:	79.5
Number of NO responses:	48	Percentage of NO responses:	20.5

8. Total # of responses to Water Department: 190

Number of YES responses:	155	Percentage of YES responses:	81.6
Number of NO responses:	35	Percentage of NO responses:	18.4

9. Total # of responses to Sanitation Department: 130

Number of YES responses:	109	Percentage of YES responses:	83.8
Number of NO responses:	21	Percentage of NO responses:	16.2

10. Total # of responses to American Red Cross: 159

Number of YES responses:	125	Percentage of YES responses:	78.6
Number of NO responses:	34	Percentage of NO responses:	21.4

11. Total # of responses to Local hospitals: 202

Number of YES responses:	158	Percentage of YES responses:	78.2
Number of NO responses:	44	Percentage of NO responses:	21.8

12. Total # of responses to State Department of Transportation: 51

Number of YES		Percentage of YES	

responses: 42 responses: 82.4
Number of NO responses: 9 Percentage of NO responses: 17.6

13. Total # of responses to State government: 94
Number of YES responses: 77 Percentage of YES responses: 81.9
Number of NO responses: 17 Percentage of NO responses: 18.1

14. Total # of responses: Local news media (radio, television): 116
Number of YES responses: 94 Percentage of YES responses: 81.0
Number of NO responses: 22 Percentage of NO responses: 19.0

15. Total # of responses to Military: 52
Number of YES responses: 43 Percentage of YES responses: 82.7
Number of NO responses: 9 Percentage of NO responses: 17.3

16. Total # of responses to Federal agencies: 68
Number of YES responses: 55 Percentage of YES responses: 80.9
Number of NO responses: 13 Percentage of NO responses: 19.1

17. Total # of responses to Other (specify): 45
Number of YES responses: 39 Percentage of YES responses: 86.7
Number of NO responses: 6 Percentage of NO responses: 13.3

(27) In your opinion, does your jurisdiction currently have the potential for the following disasters?

Natural Disasters

Total # of responses to Water disaster - dam burst, flash-floods: 679
Number of YES responses: 497 Percentage of YES responses: 73.2
Number of NO responses: 182 Percentage of NO responses: 26.8

Total # of responses to Earth movements - earthquakes, mud slides: 638
Number of YES responses: 275 Percentage of YES responses: 43.1
Number of NO responses: 363 Percentage of NO responses: 56.0

Total # of responses to Wind storms - hurricanes, tornados, winds in excess of 75 M.P.H.: 685
Number of YES responses: 577 Percentage of YES responses: 84.2
Number of NO responses: 108 Percentage of NO responses: 15.8

Total # of responses to Winter Blizzards - Ice/Snow Storms: 678
Number of YES responses: 510 Percentage of YES responses: 75.2
Number of NO responses: 168 Percentage of NO responses: 24.8

Total # of responses to Drought: 594
Number of YES responses: 329 Percentage of YES responses: 55.4
Number of NO responses: 265 Percentage of NO responses: 44.6

Total # of responses to Other: 90
Number of YES responses: 47 Percentage of YES responses: 52.2
Number of NO responses: 43 Percentage of NO responses: 47.8

Man-made disasters

Total # of responses to Enemy attack: 628
Number of YES responses: 373 Percentage of YES responses: 59.4
Number of NO responses: 255 Percentage of NO responses: 40.6

Total # of responses to Nuclear incident: 638
Number of YES responses: 393 Percentage of YES responses: 61.6
Number of NO responses: 245 Percentage of NO responses: 38.4

Total # of responses to Hazardous materials, transportation - (rail, aircraft, water, pipeline, truck): 684
Number of YES responses: 637 Percentage of YES responses: 93.1
Number of NO responses: 47 Percentage of NO responses: 6.9

Total # of responses to Transportation - (other than hazardous materials) e.g., Aircraft Crash, Passenger Train: 673
Number of YES responses: 614 Percentage of YES responses: 91.2
Number of NO responses: 59 Percentage of NO responses: 8.8

Total # of responses to Conflagration: 628
Number of YES responses: 501 Percentage of YES responses: 79.8
Number of NO responses: 127 Percentage of NO responses: 20.2

Total # of responses to Other (specify): 61
Number of YES responses: 31 Percentage of YES responses: 50.8
Number of NO responses: 30 Percentage of NO responses: 49.2

(28) Does your plan specifically address:

Total # of responses to "A plan for mutual aid from fire and rescue services outside your jurisdiction?": 670
Number of YES responses: 627 Percentage of YES responses: 93.6
Number of NO responses: 43 Percentage of NO responses: 6.4

Total # of responses to "Identify the chain of command for all levels of involvement in a disaster?": 647
Number of YES responses: 573 Percentage of YES responses: 88.6
Number of NO responses: 74 Percentage of NO responses: 11.4

Total # of responses to "Contain an emergency medical operations plan for, triage, treatment, and mass transportation of injured?": 653
Number of YES responses: 546 Percentage of YES responses: 83.6
Number of NO responses: 107 Percentage of NO responses: 16.4

Total # of responses to "Partial evacuations (e.g., temporary relocation of selected areas such as neighborhoods)?": 645
Number of YES responses: 498 Percentage of YES responses: 77.2
Number of NO responses: 147 Percentage of NO responses: 22.8

Total # of responses to "Total evacuation of your

jurisdiction (e.g., total community relocation caused by a hazardous materials release or a severe international crisis)?: 629

Number of YES responses: 257	Percentage of YES responses: 40.9
Number of NO responses: 372	Percentage of NO responses: 59.1

Total # of responses to "Individuals or agencies having the legal duty and responsibility to command disaster operations?": 624

Number of YES responses: 522	Percentage of YES responses: 83.7
Number of NO responses: 102	Percentage of NO responses: 16.3

(29) Have you used your disaster plan during classroom tactics and logistics training sessions for:

Total # of responses to "Simulated enemy attack": 625

Number of YES responses: 112	Percentage of YES responses: 17.9
Number of NO responses: 513	Percentage of NO responses: 82.1

Total # of responses to "Simulated peacetime disaster": 660

Number of YES responses: 457	Percentage of YES responses: 69.2
Number of NO responses: 203	Percentage of NO responses: 30.8

(30) Have you implemented your disaster plan on a "live" training exercise within the past five years, (1974-1979)?

Total # of responses: 680

Number of YES responses: 438	Percentage of YES responses: 64.4
Number of NO responses: 242	Percentage of NO responses: 35.6

(31) Have you implemented your plan during an actual disaster within the past five years. (1974-1979)?

Total # of responses: 677

Number of YES responses: 298	Percentage of YES responses: 44.0
Number of NO responses: 379	Percentage of NO responses: 56.0

(32) If your plan has been activated within the past five years, indicate what type of disaster.

Natural disasters — Total # of responses: 308

1. Water disaster: 127 responses, 41.2% of total response.
2. Earth movement: 12 responses, 3.9% of total response.
3. Winter blizzard: 177 responses, 57.5% of total response.
4. Wind storm: 116 responses, 37.7% of total response.
5. Drought: 5 responses, 1.6% of total response.
6 Other (specify): 36 responses, 11.7% of total response.

Man-made disasters - Total # of responses: 190

1. Hazardous materials transportation incident: 85 responses, 44.7% of total response.
2. Hazardous materials fixed facility: 52 responses, 27.4% of total response.
3. Transportation (other than hazardous materials): 60 responses, 31.6% of total response.
4. Conflagration: 43 responses, 22.6% of total response.
5. Other (specify): 25 responses, 13.2% of total response.

(33) Did use of the plan during one of the above disasters result in its being updated?

Total # of responses: 383

Number of YES responses: 275	Percentage of YES responses: 71.8
Number of NO responses: 108	Percentage of NO responses: 28.2

(34) When was the last time your plan was reviewed by the fire department for necessary changes or revisions?

Total # of responses: 615

1. Within one year of July 1979: 368 responses, 59.8% of total response.
2. Two to three years: 153 responses, 24.9% of total response.
3. Three to five years: 43 responses, 7.0% of total response.
4. Five years or more: 51 responses, 8.3% of total response.

(38) Would you be willing to share your disaster planning knowledge and information with other fire chiefs who have similar problems?

Total # of responses: 578

Number of YES responses: 570	Percentage of YES responses: 98.6
Number of NO responses: 8	Percentage of NO responses: 1.4

DISASTER PLANNING GUIDELINES FOR FIRE CHIEFS, by Michael S. Hildebrand. UNCLASSIFIED. International Association of Fire Chiefs, Inc., Washington, D.C. 20036. July 1980, pages, (Contract Number DCPA01-79-C-0303, Work Unit 2531-I).

Abstract

This planning guide was prepared by the International Association of Fire Chiefs in fulfillment of a contract with the Federal Emergency Management Agency to identify the extent, level of involvement, cooperation and success of local fire departments in disaster planning. Types of disaster plans, planning elements and relationships among federal, state and local plans are examined as they relate to fire service preparedness and operations.

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